

American

FORESTS

AUGUST, 1957

50 CENTS



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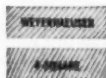
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American FORESTS

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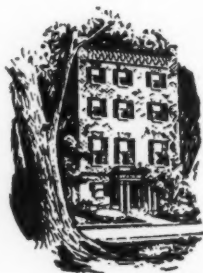
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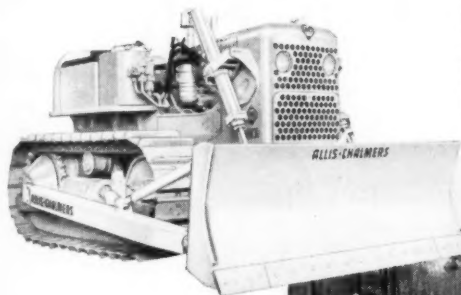
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The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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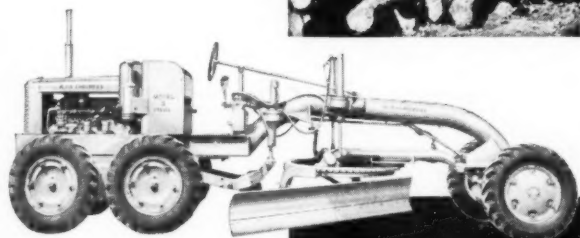
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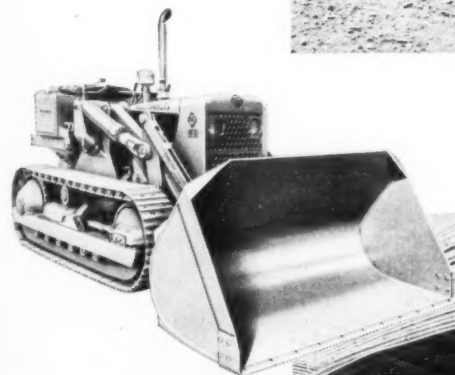
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Forest Forum

"What Are You Going To Do About The Klamath Indians . . .?"

THIS question is being asked with increasing frequency. The situation? As of last month, both houses of Congress had deferred Public Law 587 which gives each member of the tribe the right to withdraw from the tribe and have his interest in tribal property converted into cash; or remain in the tribe and participate in a management plan for the reservation. Most of the members may withdraw if so permitted. To pay them off will require sale of reservation assets valued at well over \$100 million, of which 98 percent is in prime timber. With P. L. 587 suspended until the end of the second session of the 85th Congress, probably about July, 1958, what constructive steps have been taken? The first definite proposal is the bill authored by Senators Neuberger and Morse (S. 2047) which provides; 1) federal purchase of all tribal lands at the fair market value; 2) transfer of timberlands under sustained-yield management to the Forest Service; 3) administration of the Klamath marsh lands by the Fish and Wildlife Service; 4) sale of remaining range and farm lands on a competitive bid basis; 5) payment of pro rata shares of the proceeds to tribal members with due provision made for minors as provided by the Secretary of the Interior.

Have there been any other definite proposals? Yes. The Executive Committee of the Klamath Tribal Council, speaking to the Commissioner of Indian Affairs through the tribe's legal counsel, has suggested that Congress create a "super board" for further study of Klamath termination problems. This board could include representatives of the Department of the Interior, Department of Agriculture, state of Oregon, Klamath and other counties, the public, the timber industry and tribal representatives.

Is the appraisal report from the management specialists appointed by former Interior Secretary McKay available as yet? No.

What has AFA been doing about the matter? This spring the association's Chief Forester inspected the tribal property in Oregon and discussed the problem with leading Oregon citizens. His report will be considered by AFA's Board of Directors on September 29, at Madison, Wisconsin. At the same time, the Chief Forester has been conducting an informal opinion poll, still incomplete, among scores of association members. This poll, in effect, asks members, "What do you think we ought to do about it?" Some of their answers are published in this space. The opinions of other members are cordially solicited.

What policy guides does AFA's Program for Forestry provide on this particular issue? It states, "As a general rule,

it should be the national policy to leave in private ownership most forest land having reasonable prospect of effective management thereunder; and to extend state and federal holdings for timber production chiefly in land types not having such prospects or where there is need to complete existing units." In other words, a statement that permits very liberal interpretation. While the Indian lands are private lands in the sense they belong to the Indians, they have always been administered by a federal agency.

What must any equitable solution of this problem do? It must: 1) provide first for the future welfare of the Indians; 2) insure continued good management of the renewable resources; 3) maintain or improve the local economy; 4) be acceptable to the Klamath Tribe of Indians as well as to the United States Congress.

What's your suggestion?

An Economist: "It seems to me that before this land is turned over to public ownership, every effort should be made, say over a period of three to five years, by some responsible entity to dispose of the property for the highest price to private status. . . . There is involved here a deeper issue in which we continue to keep property off the private tax rolls without first giving private enterprise an opportunity to live up to its responsibility."

An Educator: "It would seem to me that one of the principal things to be guarded against would be the possibility of being subject to attack on the grounds of having denied the Indians a fair value on their property."

A Forester: "As a general premise it seems to me that The American Forestry Association should adhere to the principle that the Klamath unit should be handled on a sustained-yield basis with full recognition of the industrial development and the utilization that has grown up around the area through the years. Your observations indicate that there are no local controls which will assure sustained-yield operations if title is transferred to private ownership. Consequently, I find myself joining with general public opinion that the best solution for the area is to place it in public ownership. . . . I am well aware of the widespread opinion that federal ownership should not be increased and in many areas I fully subscribe to this position. On the other hand, if adherence to this feeling purely as a matter of principle serves adversely in terms of public welfare and need, I think any prudent person should recognize the validity of an exception and subscribe to public ownership."

A Lumberman: "AFA might well recommend, as relating to the Klamath Indian lands, the strengthening of the Oregon Conservation Act to place the burden of

proof on the individual allottee as to whether or not he was converting land to grazing or other agricultural purposes. The State Supervisor of Forestry should refuse the issuance of cutting permits unless the agricultural values of the land are obvious."

An Educator: "I would favor S. 2047 in so far as it provides for federal acquisition. From that point on I would favor the appointment of a board comprising representatives of the interested agencies, and also some disinterested members, to set up a plan of management which would include allocation of certain lands to certain agencies and disposition by sale or exchange of other lands. I do not like the idea of parcelling out the property without some real planning."

A State Conservationist: "If a choice is to be made between S. 2047 and the continuance of P. L. 587, those concerned with good forest management of the Klamath Indian timber properties should certainly prefer federal acquisition. Most informed people believe that proper solution to this problem will die by default if no alternate course of action is developed. I believe The American Forestry Association policy would endorse private ownership of these lands providing such ownership is of the nature that would give reasonable assurance of a sustained high level type of forest management."

A Publisher: ". . . Federal purchase would be the best thing—as to the timber land, that is—for Forest Service management would assure sustained-yield and remove these lands from the hazards and responsibilities inherent in private ownership. It is most unlikely, however, that the interests that have opposed further federal acquisitions to be added to the national forests would join in promoting a purchase program and equally unlikely that the Congress would appropriate the necessary funds. That, as I see it, leaves the bond program we discussed the only solution."

A Lumberman: "My approach to this legislation (S. 2047) can be put rather quickly and bluntly. It is one of complete opposition to the idea of federal acquisition of the entire property, with management of the commercial timber lands to go to the U. S. Forest Service. It may be that some of these lands for management purposes should be incorporated into the Forest Service structure, but for the bill to do this under a blanket seems to me to be wrong and essentially unsound."

A Lumberman: "Primarily, I think this is a matter that should be handled by the people in Klamath County and the state of Oregon. However, lumbermen on a national basis should also be concerned be-

(Turn to page 67)

COLLOQUY ON ACCESS ROADS

In an unusual 28-point colloquy on the Senate floor
Senators Hayden and Morse pinpointed current needs
on access road construction in the national forests



Senator Carl Hayden, of Arizona

Senator Wayne Morse, of Oregon



MR. MORSE. Mr. President, I should like to ask the distinguished chairman of the Appropriations Committee to inform me regarding the forest road and trail program of the Forest Service by means of his answers to the following questions:

First. Page 24 of the committee report shows that \$60 million will be spent on timber access roads alone by the Forest Service in the coming fiscal year, and that only one-fourth of this road construction money will come from funds appropriated by the Congress. The other three-fourths or \$44 million to \$45 million in road construction funds will come from reductions in the price of federal timber so that the timber purchaser can build the roads needed. Am I correct in this?

MR. HAYDEN. The Senator from Oregon has made a correct statement.

MR. MORSE. Second. Does Congress have any control over the \$45 million the Forest Service will deduct from the price of timber so that purchasers can build roads?

MR. HAYDEN. In the past we have relied entirely upon the For-

est Service in this matter. I think they have done an excellent job.

MR. MORSE. Third. If the government appropriated such part of \$45 million as was needed for main line access roads, the budget would go up, but off-setting revenue would come in, so in reality there would not be an uncompensated increase in federal expenditures. Is that statement correct?

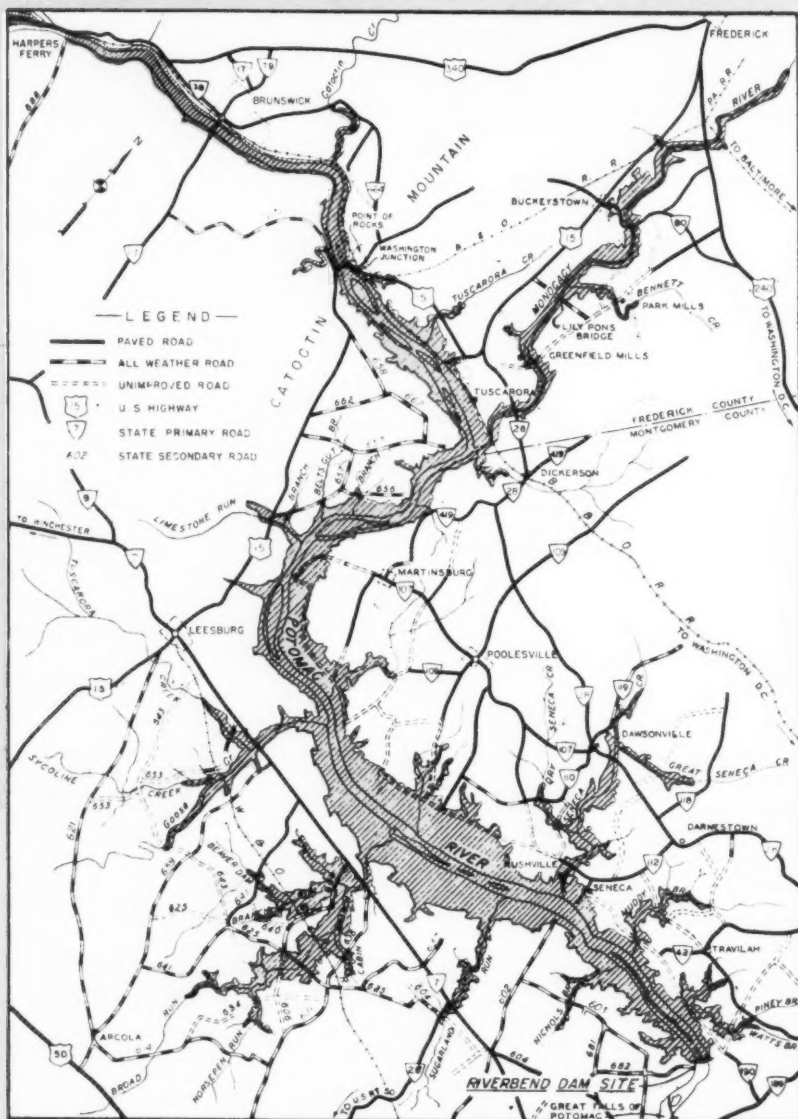
MR. HAYDEN. That is a correct statement.

MR. MORSE. I wish to point out, as the Senator from Arizona and I have pointed out in past colloquies in making the legislative history regarding this item, that this really is a money-making investment for the federal government, when everything is added up.

MR. HAYDEN. I have been convinced of that for a long, long time.

MR. MORSE. Of course, part of the necessary funds for the roads are included in the appropriation bill; and by that means the federal government saves some of the timber which otherwise would be lost because of insects, fire, and rot. When the road is already in, then

(Turn to page 64)



Color indicates area which will be inundated if Riverbend Dam is constructed

By BETTY KINDLEBERGER

SHOULD THE POTOMAC BE DAMMED?

BECAUSE of the Potomac River's juxtaposition with Washington and national affairs, both past and present, Americans everywhere regard this historic river almost as a national shrine; and any changes in this river's status quo are viewed with more than ordinary interest. Any proposed tampering with this continuing part of our national heritage arouses immediate reader comment and last month proved to be no exception. As the Corps of Engineers conducted a series of hearings pointing to future impoundment of water on the Potomac, readers once again were asking for a full report on all developments up to this time.

Residents of the Potomac River Basin, particularly those of the greater metropolitan area of Washington, D. C., share this sentimental attachment for the Potomac but realize measures must be taken to insure the municipal water supply, curb the potential flood threat, and abate pollution. However, the Riverbend Dam offered as a possible solution by the Corps of Engineers at the hearings has stirred up a vigorous debate and divided area residents into opposing camps.

These hearings, at key locations throughout the Potomac River Basin, were held pursuant to a 1956 Senate Resolution which directed the "... Board of Engineers for

Rivers and Harbors . . . to review the report on the Potomac River and tributaries . . . in order to determine whether any modification of the recommendation contained therein is advisable at this time, with a view to preparation of a comprehensive plan for control of floods and the development and conservation of the water and related resources of the basin, with emphasis on present and future needs for water supply and pollution abatement . . .

The Riverbend Dam was proposed in the report referred to in the resolution, and was presented by the engineers only as a starting point for the hearings. Under this

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proposal, an 85-foot dam would be built just above Great Falls, creating a 36,000 acre lake. This lake would extend about 42 miles up stream almost to Harpers Ferry. If this plan were adopted, many acres of land would necessarily be inundated, as would 35 miles of the 184-mile historic C & O Canal. However, from the outset of these hearings the engineers emphatically stressed that the corps was not definitely committed to this plan, and that the purpose of these hearings was to obtain public sentiment on the Riverbend proposal and to receive alternative suggestions.

Primary opposition at the hearings came from landowners whose property would be adversely affected by the dam, and from conservationists who contend that valuable wilderness and recreational areas will be destroyed as well as several historic sites along the Potomac. As an alternative, these people suggested a series of small dams be built on Potomac River tributaries, such as the Savage River Dam.

In answering these criticisms Mr. D. V. C. Birrell, Assistant Chief, Engineering Division, U. S. Army Engineer District, Washington, said, "Nobody wants the dam in his backyard. Wherever it is located, some people in that area will complain. The people in the valley can't see why they should have the dam just to help the people in the metropolitan area and vice versa." In commenting on the advantages of the Riverbend site Mr. Birrell said, "As far as capacity is concerned it is the most economical so far. For most efficient results the dam should be as large as economically feasible, and as close to the point of use as possible to insure the water supply and provide effective flood control measures." Regarding the recreational effects of damming, Mr. Birrell declared that, "There would be recreational opportunities for all, instead of just for the hardy few as it is at the present time."

Mr. Joseph Kaylor, director of Forests and Parks for the state of Maryland, supported the single dam theory and said, "A dam is necessary to impound water to insure a supply for the growing population. But as to the site, I guess Riverbend is as good as any, and the type of dam to be constructed, I will leave to the judgment of the engineers. We must make long and rapid strides to meet the growing demand for water, and

(Turn to page 42)



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Mr. Besley, former executive director-forester of AFA, has been doing a lot of field work since he moved to Canada



"How's Lowell Besley getting along in Canada?" members continue to ask. Here's the answer right from Montreal, Canada

DEAR EDITOR:

You may be sure that I read with particular pleasure your December 1956 editorial "Accent on Research," and that I have marked the dates of September 30 to October 3 at Madison, Wisconsin, as a must. It gives me a great deal of satisfaction that the research plank of the "Program for American Forestry" is receiving special attention this year, and that your Annual Meeting in 1957 is to be a North American Research Congress. I shall be there, and I am really looking forward to seeing all of my AFA friends.

Speaking of research, you may be wondering what I have been doing the past year as Chairman of the Woodlands Research Department of the Pulp and Paper Research Institute of Canada, with headquarters in Montreal. Well, the first day on the job found me at Baie Comeau, Quebec, on the rugged north shore of the St. Lawrence River. There I had an opportunity to visit the logging operations of the Quebec North Shore Paper Company (which supplies the "New York Daily News"); to scramble half a mile up the mountain (it was so steep—puff,

puff—they had to put in steps) to watch an overhead cableway bringing down "carriages" of pulpwood bundles; to see a fine new flume being constructed on single-leg supports; to see lots of splash dams on small streams leading out of lakes to bring the pulpwood down in the spring drive down the Outardes and Manicouagan Rivers; to see woods-wise horses skidding logs by themselves and doing everything but hook and unhook the chokers; to see small J-5 tractors (the woods version of the snowmobile) going like mad up and down hill and through wet places where you would sink to your armpits, hauling bundles of 4-foot pulpwood to feed the hungry cableway. Also, on this same operation, I saw young spruce and balsam firs poking their heads up on areas which had been logged the year before. I saw increased growth on trees left in a partial cutting and which are slated to be taken about 10 years hence.

The next day I inspected the testing equipment around the piers of the pulpwood holding ground the company has recently built across the Manicouagan River. A team of hydraulic engineers, employed by the institute, is studying the forces involved in pulpwood holding grounds in order to make it possible to design scientifically the shores, bends, booms, piers, cables and anchors needed to catch and hold hundreds of thousands cords of pulpwood in a big river until needed by the mill. Hitherto, to

design has been empirical, with occasional heavy financial losses in pulpwood if it breaks, or the expenditure of far too much money in constructing the holding ground if it is stronger than it needs to be. Our research team is using a combination of theoretical calculations based on measurements taken from models built by the institute in the hydraulic laboratory of Queen's University, at Kingston, Ontario, and field measurements at various existing holding grounds throughout Eastern Canada to determine the forces involved. The design of the Manicouagan Holding Ground was based on these calculations, and the subsequent field tests bore out the predicted forces within a few per cent. Have you ever seen pulpwood jammed on the surface as far as the eye can reach? Have you ever tried walking out on the wiggly stuff a hundred feet from a floating iron boom (air compartmented like a battleship) to a concrete pier resting on a nest of piles? Well, I did. My companion even stuck a foot through into the water but managed to save himself in time by falling flat on the mass.

Another institute project (in cooperation with the company and the federal Science Service) which I inspected, was that to control the black flies which harass the woods workers. By aerial spraying of the fast-flowing water of a watershed while the pests are in the larval stage, you can be practically free of

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Washington



Lookout

By ALBERT G. HALL

FEDERAL APPROPRIATIONS FOR FORESTRY ACTIVITIES DURING THE 1958 FISCAL YEAR are probably greater than even the agencies themselves anticipated. The early indications that budget-cutting was to be the order of the day, have not been borne out by the action of the Congress in forestry matters. With "indefinite appropriations" included—those dependent upon percentages of receipts—U. S. Forest Service funds will amount to \$167,213,400 for F. Y. 1958, as compared with \$147,371,950 for 1957. This is roughly \$7 million less than the budget request, but \$3.5 million is accounted for in the reduction to \$500,000 of a \$4 million request for assistance to the states in tree-planting programs, and another almost \$3 million was pared from a Forest Service request for the development of recreation and public-use facilities on national forests. In addition to the amounts shown in the accompanying tabulation, the Forest Service will also have transferred to it \$622,000 for watershed protection activities (from \$25.5 million of Soil Conservation Service funds); \$1,603,500 for flood prevention (from \$13.2 million appropriated for this purpose to SCS); \$123,790 of Agricultural Conservation Program funds; and \$5,825,000 of the Soil Bank appropriation. Trust funds—money available from deposits made by cooperators for timber stand improvement on sales areas, for forest products research, cooperative fire control and cooperative road construction, etc.—will amount to \$13 million. An undetermined amount in fund transfers will also be available from the military and other agencies for research.

FOR INTERIOR DEPARTMENT AGENCIES 1958 FUNDING IS SLIGHTLY INCREASED over the 1957 amounts, with additions to Bureau of Land Management and Bureau of Indian Affairs for stepped-up timber management and timber-sales activities.

REPEAL OF THE SUSTAINED YIELD ACT of March 29, 1944, has been drafted into bills introduced by Senator Murray of Montana and others, and by Representatives Porter and Chudoff. The draft was prepared by the U. S. Forest Service at the request of Senator Murray. The measure, which appears certain of enactment, will not affect existing units. (See this column, July AMERICAN FORESTS for discussion of background.)

AN IMPORTANT MODIFICATION OF THE "COORDINATION ACT" of March 10, 1934, has been proposed by Representatives Metcalf, Gavin and Reuss. The bills, H. R. 8631, H. R. 8744, and H. R. 8747, would strengthen the provisions relating to wildlife protection and development in connection with public works projects and would provide for the acquisition of lands for these purposes as part of the public works authorizations. Policy of the Corps of Engineers has been to acquire only such lands and easements as are necessary for the primary purposes of a dam and to work with wildlife and recreational agencies in the use of such lands. The Metcalf proposal would, in effect, make wildlife and recreation a purpose rather than a by-product of federal public works programs.

RESEARCH INTO INDUSTRIAL USES OF AGRICULTURAL PRODUCTS, including forest products, has been proposed as a follow-up to the recently reported study of the President's Bi-partisan Commission on Increased Industrial Use of Agricultural Products. A number of bills for this purpose have been introduced in both the Senate and House—the Senate bill being S. 2306 by Senator Curtis of Nebraska and 24 others. Purpose is to set up an Agricultural Research and Industrial Board which would be authorized to enter in contracts and other arrangements for research, pilot plant operations, incentives to farmers for participation, and training of scientists. The proposed program would be carried out by means of grants and loans and the provision of technical advice and assistance to farmers and to public and private agencies and organizations.

(Turn to next page)

FORESTRY IN THE FEDERAL APPROPRIATIONS

(Fiscal Year ending June 30, 1958)

U. S. FOREST SERVICE

	1957	Budget	1958 Appropriations
Forest Protection and Utilization			
Timber sales administration and management	\$ 10,145,000	\$ 12,780,000	\$ 12,780,000
Reforestation and stand improvement	1,850,000	2,185,000	2,185,000
Recreation and public use	3,700,000	11,500,000	8,770,000
Wildlife habitat management	385,000	510,000	510,000
Range management	1,400,000	1,570,000	1,570,000
Range revegetation	1,000,000	1,190,000	1,190,000
Range improvements ^a	1,235,000	1,300,000	1,300,000
Soil and water management	640,000	810,000	8,810,000
Mineral claims, leases, etc.	1,680,000	3,280,000	3,280,000
District ranger activities	6,400,000	7,050,000	7,050,000
Land utilization projects	1,050,000	1,190,000	1,190,000
Protection—fire	10,500,000	11,300,000	11,300,000
Structural improvements	4,860,750	8,209,600	7,209,600
Fighting Forest Fires	5,250,000 ^b	5,250,000	5,000,000
Insect and Disease Control	5,120,000 ^c	5,205,000	5,205,000 ^d
Land Acquisition			
Under Weeks Act	100,000	100,400	100,400
Cache National Forest	50,000	50,000	50,000
Superior National Forest	500,000	500,000	500,000
Under special acts	10,000	10,000	10,000
Research			
Forest and range management	5,068,734	5,420,000	5,680,000
Fire control	325,562	391,500	641,500
Insects	771,499	805,900	805,900
Disease	614,161	692,600	692,600
Forest Products Laboratory	1,434,828	1,652,500	1,652,500
Products—experiment stations	514,155	562,500	562,500
Forest survey	1,049,374	1,406,300	1,406,300
Economic	376,787	393,700	393,700
Roads and Trails—Construction and Maintenance	24,000,000	24,336,000	24,336,000 ^e
Indefinite Appropriations	45,151,200	47,287,400	47,287,400 ^f
State and Private Forestry			
Forest fire control	10,025,000	10,043,000	10,043,000
Tree planting	1,000,000	1,308,000	1,308,000
Forest management and processing	1,000,000	1,510,000	1,510,000
General forestry assistance	165,000	384,000	384,000
Assistance to States—Tree Planting	4,000,000	500,000
TOTAL U. S. FOREST SERVICE	\$147,371,950	\$174,183,400	\$167,213,400

DEPARTMENT OF THE INTERIOR

Bureau of Land Management:

Management of Lands and Resources			
Forestry	\$ 3,981,000	\$ 5,374,700	\$ 5,374,700
Soil & moisture	3,301,400	4,046,700	3,926,700
Fire suppression	210,000	400,000	400,000
General administration	1,212,800	1,354,900	1,354,900
Cadastral surveys	1,653,900	2,088,200	2,038,200
Other	8,000,200	8,955,500	8,905,500
O & C Access Roads: Buildings & Recreation	4,600,000	6,500,000	5,480,000 ^g
Range Improvements	390,871	620,000	620,000 ^h
TOTAL BLM	\$23,360,171	\$29,340,000	\$28,100,000

Bureau of Indian Affairs (Forestry and Related Items Only)

Forest and range management	2,680,000	2,883,000	2,883,000
Fire suppression	140,000	140,000	140,000
Road construction and maintenance	11,500,000	12,000,000	12,000,000

National Park Service (Forestry and Related Items Only)

Forestry and fire control	765,045	942,140	867,500
Road maintenance and rehabilitation.	4,503,900	5,013,000	4,950,000

TENNESSEE VALLEY AUTHORITY

Watershed protection and improvement only	1,247,000	1,060,000 ⁱ	Not Acted On
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^aIncludes \$700,000 from Cooperative Range Funds.^bIncreased by \$6,500,000 supplemental appropriation.^cIncreased by \$800,000 supplemental appropriation.^d\$2,780,000 for white pine blister rust; \$2,425,000 for other pest control.^eIn addition about \$11,848,000 will be available from road and trail funds.^fIncludes school fund payments, slash disposal refunds, payments to states, etc.^gIncludes \$350,000 for construction of buildings, \$100,000 for recreational facilities in Alaska, \$30,000 for rights-of-way.^hFrom grazing receipts.ⁱAbout equally divided between forestry and tributary watersheds projects.

Editorial

A Committee of 28,000

With the exception of one or two slack periods, The American Forestry Association for 82 years has been an action organization all of the time. At times, the association has been truly superb, particularly when functioning as a "volunteer fire department" for the public in the battle against forest fire. As a matter of fact, if you scratch the surface of most any long-time member of AFA, you'll find an individual who is basically a fireman in his approach to forestry. The real strength of the association, it has always seemed to us, is derived from those members who regard fire as their *personal* problem—and these are the same people who cheered the association on when it helped to spark and activate the recent Southern Forest Fire Prevention Conference. And while this type of member is the enemy of all plunderers of the forest, regardless of what form they may take, it is fire, which he regards as the greatest plunderer of all, that is a fighting word in his conservation vocabulary. The stock question of this member at annual meetings is "... all these other things are fine, but what are you doing about fire?"

For the good of the country, we hope this attitude toward fire never changes. At the same time, the experts have truly convinced us that there is more to this forest protection picture today than AFA's traditional approach on fire. Serious new problems have been added. We face new despoilers in the woods that some professionals claim have now outstripped fire as plunderers. It's a fact, that more growing timber is being destroyed today by these killers and silent saboteurs than is being destroyed by fire. And this rampage of destruction is all being done quietly, insidiously and undramatically as though the fifth column of an unfriendly foreign power had slipped into our midst and was determined to wipe out our woodland resource heritage.

This new menace consists of millions and millions of little bugs and scores of tree diseases. Our experts haven't learned how to stop some of them; and of course you all know what happened to the chestnut and is now happening to the elms and oaks. Multiply all the diseased elms you have seen on lawns and in parks by the billions of trees on millions of acres that are slowly dying and you begin to get some idea of the scope of these new destroyers. This is a deadly serious problem. In fact, some industrialists and private professionals serving on government advisory committees have urged that research to help cope with this problem be more than *trebled* at once. Yet many people are barely aware that this problem exists.

What does AFA's Program for Forestry have to say about it? It says, "Inroads made by forest pests on the nation's timber today are imperilling the forest economy of many communities. In no field of forest activity is the *need for immediate remedial action more acute!*"

That's pretty plain talk. The truth is that we have been backing away from this problem. Harold Titus, an outdoor writer, once told us that AFA could never rest easy with a clear conscience until it had come to grips with this menace with the same determination it tackled fire. Titus is right. And up to now we have failed to come to grips with it despite the admonitions of a whole series of leaders, including the late Clark Everest. In short, we, the members of an association that made its reputation by carrying the war to the plunderer fire, are failing miserably thus far in making any effort whatsoever to attack and defeat what may well prove to be the greatest woodland plunderers of all time.

What do we need to do? First, we must find the right psychological lever whereby we can properly dramatize and thereby focus public attention on the problem. Second, we must determine if the appropriate federal, state and private agencies are meeting their responsibilities, and if not what can be done to help. Third, we must lay out the *whole* story on the use of insecticides in our forests and let the chips fall where they may in determining what is being overlooked or overdone; and fourth, *without in any way challenging or upsetting the aims and purposes of our system of parks*, determine what can be done in cleaning up areas that have become incubators for tree diseases and pestilence.

To set forth the problem we propose to publish a special issue next spring on these tree killers and saboteurs that can be read and understood by any 14-year-old high school boy or girl. While key people in both the public and private agencies have already said they will help, we will need your help too. As a member of a special committee of 28,000 members, you can help by feeding us any and all facts that come to your attention about pests and disease depredations in your area, how people are combatting them, and any personal ideas you may have on this overall problem. In short, we are going to build up a whopping big file that will help us do a bangup job on this special issue. And if we do a good job, this in turn conceivably could lead to a special congress to further point up remedial measures necessary.

Help give us the tools on this and we will do the job. Make no mistake about it, action is needed and it is needed now.

The Battle of the Wilderness

Both sides claimed enough votes last month in the Senate and House committees to swing the Wilderness Bill issue. Only time will tell which side will win out in this battle

By JAMES B. CRAIG

Areas like this are involved. AFA Trail Rider Canoe Expedition portages out of the "pot hole" between McIntyre and Brent Lakes in wild Quetico country

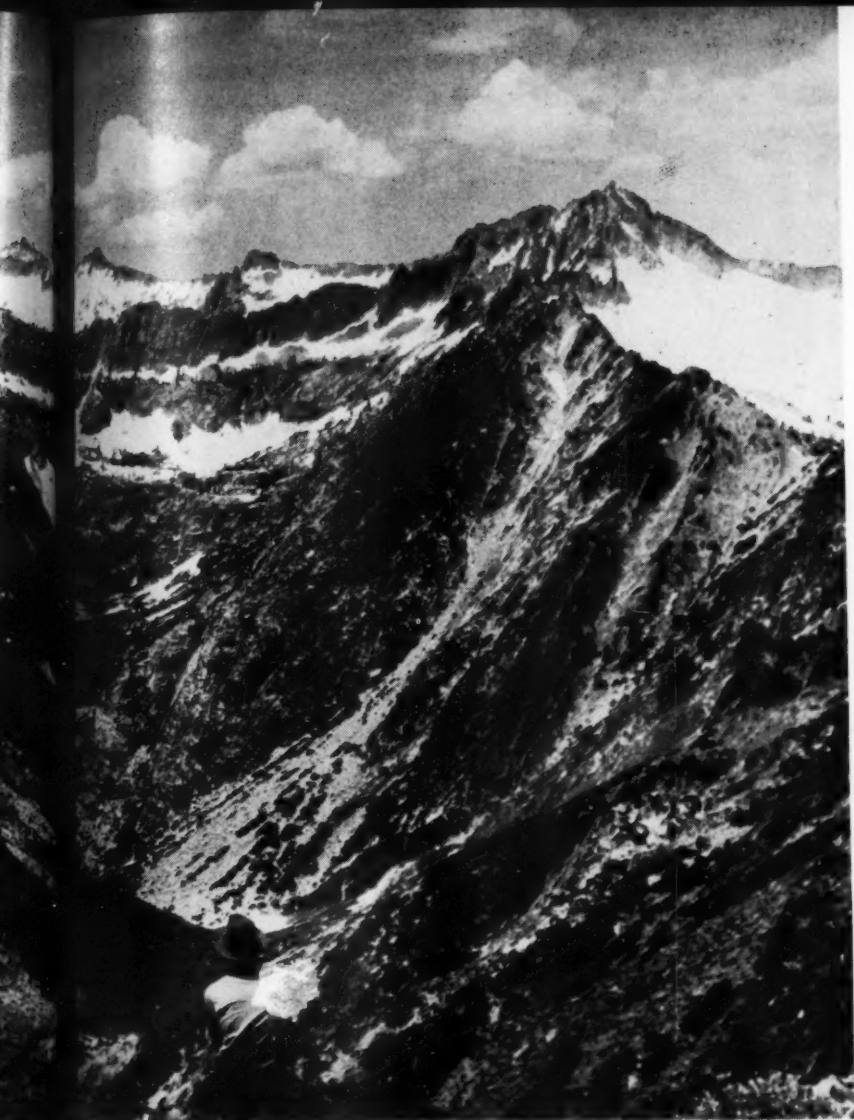


Photo by Lee Prater



IN view of the mass of testimony that was read into the record at last month's hearings on the Wilderness Bill before the House and Senate Committees on Interior and Insular Affairs, it is easy to lose sight of the principle issues involved. In view of that fact, a recapitulation of those issues might be in order at this time.

First, with one possible exception, no witness, on either side, appeared before either committee who challenged or opposed wilderness as a bona fide use of public land. The one possible exception was a water witness from a Southwestern state who suggested that establishment of wilderness areas on national forests might be at odds with the intent of the organic act of 1897 that estab-



Chief R. E. McArdle, of Forest Service, opposed present version of Wilderness Bill but argued stoutly for wilderness

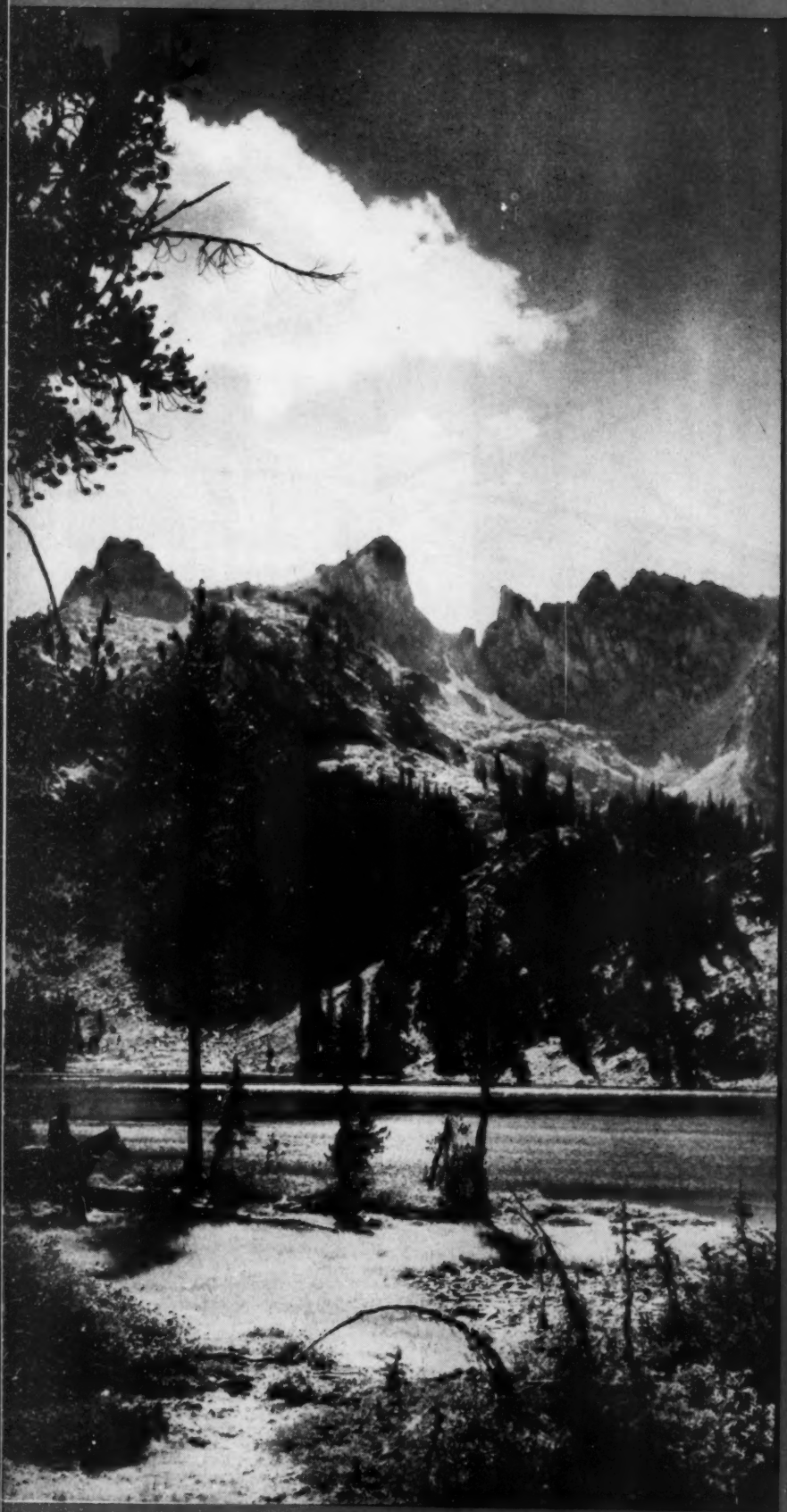
Like frosting on conservation's cake, lovely Stuart Fork Lake is kept unspoiled in Trinity National Forest

Roadless and wild is this Saganaga Lake area in Minnesota's Superior National Forest. Forest Service intends to keep it that way too

lished the forest preserves primarily for the purpose of preserving water. Other dissonant notes were sounded by two senators who indicated that it might be unwise to maintain eight percent of the national forests in a wilderness state for the benefit of something less than one percent of the recreational public. These senators suggested that maintenance of these vast roadless areas might be depriving millions of Americans of an opportunity to see priceless gems of their natural heritage. However, to sum up, the thinking of the great majority of witnesses indicated that they believe in wilderness and feel it has a place in the overall public lands picture. Wilderness itself, then, is not the issue here.

What, then, is the issue? After





Director Conrad Wirth, National Park Service, opposed Wilderness Bill for Department of the Interior

Jewels in the national forests wilderness crown: Alice Lake in the Sawtooth (left); Welcome Lake area, Salmon National Forest (lower right)



Photo (above) by M. S. Benedict; (right) by Lowell J. Farmer

months of discussion culminating with last month's hearings, we believe the real issue involved has been drawn chiefly by two different schools of thought among conservation organizations. The first consists of 14 different organizations (substantially the same bloc that was formidable enough to make a new administration reconsider its position on the Dinosaur Monument issue). These are: The Wilderness Society, The National Parks Association, Trustees for Conservation, Wildlife Management Institute, The Irzak Walton League, National Wildlife Federation, Sierra Club, Citizens Natural Resources Association of Wisconsin, Citizens Committee on Natural Resources, National Council of State Garden Clubs, American Nature Association, Nature Conservancy, Federation of Western Outdoor Clubs, and the

American Planning and Civic Association.

The second school of thought consists of The American Forestry Association.

What is the thinking, then, of the 14 organizations that are pressing for enactment of the Wilderness Bill? Each of these groups submitted statements at the hearings, but it was perhaps an article in *Living Wilderness* that summed up this point of view most succinctly. It said: "... The executive agencies (concerned) have done a magnificent job with all too little public support for their efforts to preserve unspoiled some of the great outdoor heritage of this Nation. However, growing pressures of population and demands of industry are making it more and more difficult to resist encroachments and invasions of these magnificent areas. I believe that legislation of the type that has been

introduced in Congress, generally known as the Wilderness Bill, would greatly strengthen the hands of these administrators in preserving the areas that they have battled so successfully to care for during the past many years. The fact that this legislation makes the top officials of the various land management agencies the core of the council which it proposes to establish, is definite recognition of the excellent job that has been done and, at the same time, an effort to strengthen their hands against what most conservationists believe are going to be increasingly difficult pressures to withstand..."

To this policy statement, The American Forestry Association replies, "We concur that the existing agencies have done a good job often in the face of difficult obstacles... which is precisely why we do not be-

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Said grateful Louisiana State Police, "When it comes to a showdown, those foresters can deliver." Here's the story

CONVOY TO CAMERON

By **ED KERR**

Photos by Elemore Morgan

AT noon Friday, June 28, one convoy of Louisiana Forestry Commission trucks, tractors and pickups led by a state policeman dared the almost impossible feat of reaching hurricane-struck Cameron—and made it. These valiant men are some of the unsung heroes of the Hurricane Audrey disaster, for their trucks were the first into Cameron by 18 hours.

The worst of Hurricane Audrey had struck Cameron, located in the

southern-most reaches of Louisiana, during the morning of June 27. In her wake, trucks were needed badly. Trucks for hauling food, palatable water, generators—and bodies.

That Friday morning, District Forester Don McFatter of DeRidder volunteered his services to State Policeman Jerome Hayes of Lake Charles. He was told to go to Cameron.

"From all reports we can get from in there," he said, "that's the place

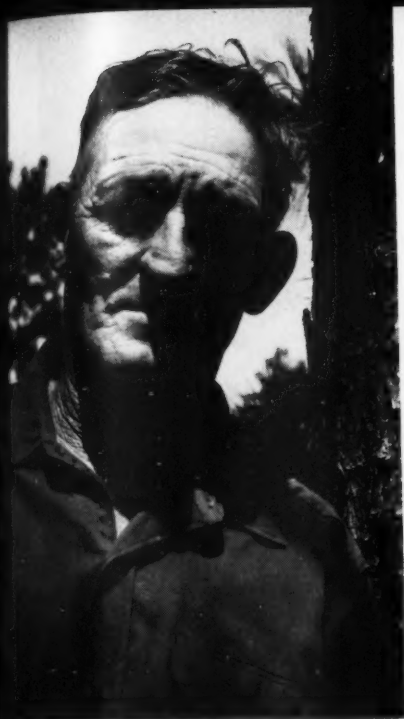
that needs help. It'll be a helluva trip, but they need men with know-how!"

McFatter rounded up the following men: Ranger Hassel Berry of DeQuincy and Ranger James Green of DeRidder; Assistant Ranger John L. Perry of Merryville and his two men, Fireman Alvin Hennigan and Fireman Othel Hennigan; Assistant Ranger Ernest Burge of Singer and his two men, Ted Burge and Ira Cooley; Assistant Ranger Lonnie

This brick house was hit by 105 mile wind and 20 foot wall of water



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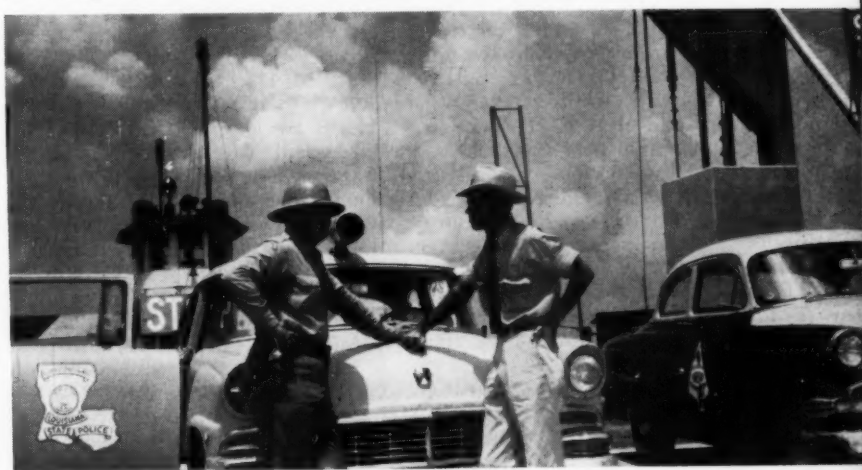


Foresters are rugged in Louisiana.
Paul Royer, 67, was on the caravan

Forestry Commission vehicles and personnel are always ready to roll.
Left to right, Crew Members Ira M. Cooley and Lloyd A. and Ernest Burge



District Forester Don McFatter (right) who led Cameron convoy
and Trooper Jim Moore following unusual ride on Cameron ferry



This boat, the "Three Brothers," was washed up on main
street of Cameron in big blow and left there high and dry





Blitzed pine of Crowell Lumber Company north of Pine Prairie. Some plantations had up to 50 percent damage

Malone of DeQuincy and his two men, Fireman George Mayers and Woodrow Vincent; Assistant Ranger Marlon Marcantel of Starks and his two men, Paul Royer and John Lummus; and Radio Technician Richard Bennett of Merryville.

Bennett was anxious to go for two reasons. First, he knew he'd be needed for radio repairs, not only on forestry equipment but on state police radios in Cameron. Secondly, his wife's mother and father lived in Cameron and naturally there had been no word from them since the hurricane hit.

McFatter and Bennett preceded the convoy to Lake Charles to try and get some word about Bennett's folks. They went to McNeese State College on the outskirts of the city, where survivors were being taken from the stricken area by boats, and Bennett found four men that he knew. They assured him his folks were all right, that they had crawled up in the rafters of their store and rode the storm out there. They were later brought out safe.

They met the convoy at state police headquarters, State Trooper Jimmy Moore and another trooper were assigned to lead the convoy, along with McFatter. They started out about noon on the 40-mile journey that was to take them more than 12 hours to complete. They decided their best bet was to try and

hit Cameron from the west, through Hackberry and Holly Beach.

Just below what used to be the town of Hackberry, they saw the first of what was in store for them on the rest of the trip. Water still covered all but the surface of the highway, left there from the tidal flood that caused the 500-odd deaths in the area. To the south, there was nothing between the lonely convoy but water from there to Cuba. To the north, the water stretched at least as far as the eye could see.

Added to this hazard, the road was blocked with wreckage for two miles beyond. This meant slow going, although they were fortunate that a construction company had a TD-18 dozer working on the road-clearing operation when they arrived. To help, though, they pulled the ramp boards off their ton-and-half, tractor-carrying truck, tied them cross-wise onto the front of their tractors and used their tractors for dozers, too.

Fixing their tractors proved to be very dangerous work because of the hundreds of poisonous snakes on the highway. One man, Alvin Henigan, appointed himself chief snake killer during the operation and killed snakes for an hour. Coons and nutria were finding refuge on the right-of-way too, but soon found even more danger from the snakes. One baby coon was seen on

top of a fence post that was sticking out of the water about six inches, holding on for dear life. He had probably been there for more than a day.

Further down the road, a grown-up coon was lying across the top of a power pole about 25 feet up, looking very philosophical about the whole thing, with chin in hand.

The going was slow, by inches, over the two-mile stretch, but it was even slower near Holly Beach, where the gulf had inundated the road and cut deep ditches across in many places. They still had the TD-18 with them, though, so the operator went ahead and slowly filled in the ditches so the vehicles could get across.

Before the storm hit, Holly Beach was a town of about 35 or 40 homes and many camps. Today, there was

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Radio man Richard Bennett brought up the rear of the Cameron convoy



CONSERVATION OF AMERICA'S FORESTS

By ROBERT L. F. SIKES

This statement by U. S. Representative Robert L. F. Sikes is from the Congressional Record, and shows that the Congressman is in fine form

MR. SPEAKER, there is now before the Conference Committee on Appropriations for the Department of Agriculture for fiscal year 1958 a very important question regarding conservation of America's forests. There are some phases of the tree-planting program under the soil bank on which general information will, I think, be helpful.

The \$5 million for nursery operation and development being considered by Congress for fiscal year 1958 under the soil-bank program will enable the state foresters to meet the unprecedented demand for nursery seedlings. This need is particularly acute in Florida and other Southern states. The soil bank tree planting signup to date in Florida makes up 9 percent of the entire national signup. The Florida state forester expanded capacity of three existing state nurseries in fiscal year 1957 with soil-bank funds. Next winter, he will have about 46 million soil-bank seedlings available and can produce up to about 58 million seedlings for this program in each remaining year for the life of the program.

It is planned to use \$4,500,000 of the \$5 million in the budget for fiscal year 1958 for purchasing seed, operating nurseries, and purchasing seedlings from commercial nurseries. The remaining \$500,000 will be used to complete expansion of soil-bank nurseries started in fiscal year 1957.

For fiscal year 1956 commercial nurseries produced an output of 76,923,000 seedlings for forest and shelterbelt planting; whereas production of similar stock by state foresters

was 580,884,000; by forest industries was 77,307,000; by Forest Service and TVA was 141,850,000; and by soil conservation districts, counties and municipalities was 9,004,000. This output from all sources totaled 885,968,000, of which the commercial nurseries share was 8.7 percent, and for state nurseries was 65.6 percent. An equivalent of this entire fiscal year 1956 output from all sources was planned as the annual soil bank need for nursery stock. The state foresters had the experience and basic facilities to provide for rapid expansion of nursery production. They were willing to do the job based on cooperative agreements and are in a position to distribute the needed planting stock through their regular distribution systems. Agreements have been made with 33 state foresters accordingly. No expansion of federal nurseries has been made or is contemplated. Full consideration has been and will continue to be given to acquiring adapted nursery stock from commercial nurseries when available at reasonable prices. In many states and groups of states where large signup is developing, there are no commercial nurseries producing the class of stock required. Each of the state foresters considered fully the commercial nursery capacities and potentials in his state before preparing plans for expansion and production schedules in state nurseries. Although state nurseries are ordinarily able to provide stock at cheaper prices for soil-bank use than are commercial nurseries, this was not the determining factor in planning program stock sources.

It appears that the assistance of all types of nurseries will be needed to meet the accelerated demands for soil-bank nursery stock. Commercial nurseries will especially be of importance in providing hardwood stock for soil-bank shelterbelts and post lots in the Great Plains.

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U. S. Representative Sikes

Rep. Robert L. F. Sikes, of Florida's Third District, has long been regarded as a staunch supporter of sound forest and water conservation practices. Foresters, particularly, regard him as one of their most articulate champions. In three elections he has carried every precinct in all 16 counties in his district. His activities in behalf of the aged and the blind further marks him as a man with true conservation instincts.



Nursery Manager Ennis Washburn (left) supervises building a pipe rack. He'll have drainage problems licked in two years



Judge W. E. Merrem (right) and assistant O. R. Crawford manage "Southwestern's" big program. Both are active in AFA

Southwestern's Stillman Nursery and part of the 20-acre lake. The sign at the entrance speaks for itself



By C. C. SPRINGFIELD

ONLY God, says the poem, can make a tree. However, man can help. And man is helping. For instance, the Stillman Nursery at Bon Wier, Texas, is now raising its first crop of pine seedlings and is expected to add between 15 and 20 million trees to the vast Gulf Coast pine belt of east Texas this year.

The first installment of this operation will have been completed this fall when the huge quantity of miniature pines have been hardened off, lifted, packed and planted.

Incidentally, the nursery will continue this program from now on. In so doing, it will strengthen the entire east Texas economy. It will strengthen the land, improve the game and fish situation and help to increase the underground water supply, so vital to this area which is already one of the most industrialized in the South.

The nursery is a private operation, owned by Southwestern Settlement and Development Company of Jasper. Southwestern itself is owned by the East Texas Pulp and Paper Company, which has a huge paper mill



Left, a small part of the 20 million pines growing at Bon Wier, Texas

Harry Jean and Robert Earl Love (below) hard at work weeding seedlings at the Stillman Nursery



TREES FOR THE FUTURE

at Evadale, about 20 miles north of Beaumont.

Significantly, Southwestern is one of the largest land-holding companies in the country. It owns more than 660,000 acres of land in ten east Texas counties.

Curiously, while Southwestern is concerned with growing timber, it was set up to do something almost exactly different: To sell land which had been stripped of timber and which, so far as the early 1900 thinking was concerned, was practically useless.

In the early days, this was a semi-tropical growth comprising terrific amounts of virgin timber. Timber that was cut out until the last possible penny had been extracted.

Houston Oil Company of Texas, which owned the land, set Southwestern up in 1916 in order to dispose of this non-productive empire. Ironically, as will be explained later, Southwestern could sell only a small portion of the total. In fact, it took the Big Depression to make Southwestern do an about-face and get back into the timber business.

At any rate, today we find Southwestern dedicated to raising timber. Simultaneously, it is improving its land and setting an example in conservation practice.

Here, the nursery comes into the picture.

On June 6, 1956, Southwestern officially became a property of the East Texas Pulp and Paper Company, manufacturers of paper for all purposes. When the paper mill was first planned, Evadale was chosen as a location because of the availability of pine which would be used to make pulp from which the paper would be made.

Further, because the builders of the mill knew they'd have to have an unending supply of timber if their operation was to be a continuing success, a nursery was among the earliest plans contemplated. In fact, it was a must.

So, while plans for the paper mill matured, a hunt was begun for a suitable location for a nursery.

It should be known here, however, that Southwestern had been doing some pine planting for several years;

The packaging shed is large and airy. A machine shop, tool room are in the background



and it has many pine plantations. However, it could secure only one and a half million seedlings annually from the State Nursery, so it had to have one of its own inasmuch as it needed at least 15 million seedlings a year.

So, a location was sought. Many factors entered into this choice. First, there must be good rainfall. Second—and most important—the soil must be compact enough to let the seedlings flourish; it also must be light

Seed is stratified in this refrigerator. Mr. Crawford shown at left



enough to let the soil come free without tearing the tender root systems when the seedlings were lifted.

After much experimentation, checking records and soils, studying rainfall records and so on, Dr. T. S. Coile, forestry and soil consultant of Durham, North Carolina, recommended a site near Bon Wier in Newton County.

There, the soil was right. The rainfall averaged 60 inches a year. The site was in the pine growing belt. It was not far from Jasper, where Southwestern has its offices.

The 50-acre site was covered with dense vegetation and had to be cleared. The job began early in 1956. A 20-acre lake was built with a capacity of 48-acre feet of water, sufficient for all ordinary irrigation needs.

While the soil was being readied, a packing shed went up. Also a residence for Nursery Manager Ennis Washburn, a forestry graduate of Alabama Polytechnic Institute.

Around 5,600 feet of underground mains were laid. Every 56 feet, a riser emerged to provide a lateral for sprinklers, placed 40 feet apart.

The system was designed so a 20-acre plot of seedlings can be given two inches of water in a two hour period. When necessary, seedlings are irrigated every other day.

The packing shed is large, airy, with a tool room, machine shop and fertilizer storage bins in one end. In the other is an office and a walk-in refrigerator.

The nursery has seven regular employees and also uses seven part time workers when necessary. Man-

ager Washburn can call on a nursery consultant, Dr. Jack T. May of the Alabama Polytechnic Institute's Forestry Department when problems arise that need a quick solution.

The nursery showed its economic value to those living in the area long before a single seed was planted. This happened when Southwestern began harvesting pine cones to obtain seeds for the nursery. Trouble was, Southwestern simply didn't have enough employees available to gather the 3,500 bushels of pine cones needed.

Local residents grabbed the task of getting the cones. They had to be mature cones—none natural-fall—with the majority coming from trees that had been newly felled for pulp or other purposes, although some were taken from tops of standing trees.

At \$4 per bushel—and a man could gather three to four bushels a day—the crop brought people over \$14,000. Paid on the spot to some who were extremely in need of cash.

Afterward, the cones were sent to a Louisiana firm for drying, threshing and processing. On return they were stratified—that is, kept in moist sand at 35 to 40 degrees for 30 to 60 days—to make them germinate quicker, since seed so treated will sprout in from five to 15 days whereas untreated seed takes from 30 to 45 days.

One of the first difficulties met was proper distribution of the seed during planting. This is occasioned by the fact that loblolly seed—and that is the main type raised on the

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Forester's Notebook

By KENNETH B. POMEROY

THE tremendous advance in utilization practice since World War II makes the deepest impression upon a visitor to the Douglasfir region.

This perhaps is most noticeable in milling operations where much of the log previously was lost in trimmings, edgings, and defective pieces. Nowadays these residues are chipped for conversion into paper, hardboard and chipboard. Poor lumber is upgraded by cutting out the defects and edge-gluing the pieces into attractive panels or by lamination into structural timbers which often measure as much as 5 feet in thickness by 70 feet or more in length. Dry planer mill shavings are ground and formed into prest-o-logs. Sawdust becomes a source of power. Bark, a waste product in other regions, is being sifted, sorted and packaged for 23 different commercial uses.

Everywhere "integration" is the watchword as forest industry seeks to eliminate the wasteful burners of out-moded, single product sawmills.

The Western Kraft Corporation is an outstanding example of the 176 plants utilizing leftovers in the Pacific Northwest. This mill gets chips ready made by the train load from sawmills and other woodworking plants, some of which are more than 100 miles distant. In fact this mill couldn't chip a stick by itself unless it hired a crew of beavers. This compact, efficient pulpmill marks a new milestone in timber utilization.

Great progress also is apparent in the woods. In earlier days, trees of a size to make sawlogs in Eastern regions, were felled to provide a bed for mature Douglasfir. Even so, these forest giants, some containing as much as 4,000 board feet in a single tree, suffered much breakage and 15 to 20 percent of the volume frequently remained in the woods in unusable chunks. Such tremendous quantities of debris, often 10 to 20 feet deep after logging, created a

serious fire hazard. So it became a common practice to burn the slash during periods of damp weather; otherwise the entire area might explode at a time of very low humidity and strong easterly winds. All this is changed.

On some forests, one may see logging areas so clean that a broadcast burn would be difficult except under extremely hazardous weather conditions. Nowadays the hemlocks and firs under 20 inches in diameter at breast height are removed first for pulpwood. Then comes snag felling as a safety measure. Some of the sound snags may be utilized as peelers for plywood or as sawlogs. Then the mature trees are felled, the logs sorted, and channelled to points of highest use. Lastly, the salvage crew sends anything firm enough to hold together to the chippers. By this time the slash is so beaten up that fire no longer is a major risk. Consequently, planting crews can restock the area in the following spring, a job usually done by hand because of the steepness of the hillsides and the frequency of stumps.

Nature oftentimes will re-seed cut over areas naturally, but along the West Coast it usually takes her eight to ten years to do the job. With growth rates of 1,000 to 1,500 board feet per year and stumpage values of \$30 to \$50 thousand, man cannot wait upon nature to fulfill this important task. Neither is he content to plant ordinary seedlings. Seed orchards of carefully chosen parents are being established so that superior planting stock can be raised under the critical eye of a trained geneticist.

And what has made all this possible? Research. Research by private, public and state organizations. And great though progress has been in this postwar period, it is but a drop in the bucket when compared to future possibilities. Mr. A. D. Anderson, Vice President in charge of manufacturing for Cascade Plywood Corporation said: "The plywood industry has made real progress since

the war, but chemical products will be the big thing in the future."

Apparently others think so too, for at Camas, Washington, the Crown Zellerbach Corporation maintains a 125-man staff of chemists, physicists, and other research specialists. These men enjoy full play of their imaginations. For example, two chemists in a well-equipped laboratory view opposite sides of the same problem. One says: "Waste effluent is a stream pollutant. How can we eliminate it?"

The other says: "We have it, what can we do with it?" And proceeds to develop yeasts, fertilizers and other by-products. Result—some 400 products flow from the mills of this corporation.

Woodland problems also receive attention. The well-rounded, but under-staffed, program of the Pacific Northwest Forest and Range Experiment Station has been supplemented within the past two years by the Weyerhaeuser Timber Company. This firm has established the only western industrial research center of its kind at Centralia, Washington. Several other firms retain research specialists in their technical development staffs.

The major problems of the Douglasfir region are identified by local observers as:

1. Conversion of old-growth stands to managed forests. This must be preceded by advance planning and the construction of access roads. A well-developed road system permits orderly salvage of dead and over-mature trees as well as better protection against the ravages of insects, fire and disease.

2. Full utilization of all available timber, especially wood residues and low-value species. Accomplishments here eventually may result in doubling the previous yield per acre of merchantable wood.

3. Fire behavior. What are the conditions that lead to uncontrollable, blow-up fires and how can such conflagrations as the Tillamook and

(Turn to page 58)

By J. R. CRANE

SHIPS AND SAWMILLS

TODAY the Maine timber business is a compact, well-organized industry that is completely self-sufficient. But back in the "good old days," it was a rather weak subsidiary of ships and sawmills.

Actually, sailing vessels were the predominant members of the ships, sawmills, and lumber trio. When the shipping business was good the forest rang with the sound of axes, and sawmills hummed busily. But when wars or pirates tied up shipping the other two industries collapsed for lack of markets.

An early historian made the wise observation that "the first settler was the first lumberman." Certainly this was true of the hardy souls who established the first colonies in Virginia and Massachusetts, their axes had to be used to construct shelters before they could leave their ships.

The first homes were rather crude log cabins and they remained the standard shelter until sawmills provided lumber for larger and more comfortable homes. It is believed that the first sawmill in North America was built near the spot

which is now known as York, Maine. It was built under the direction of Sir Ferdinando Gorges. He was a prominent Englishman who was treasurer of the joint land companies that established the first two colonies in the new world.

The first sawmills were crude, inefficient machines compared to the super-speed mills used today. They were driven by water power. The sawing machinery consisted of an up-right saw in a frame driven by a connecting rod from a crank attached to one end of the water

Today's modern sawmills can turn out a million feet of lumber in 8 hours.



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Lumber used to be loaded by hand. Today it's all mechanized

Oxen of the old days have given way to powerful new equipment



Today all that remains of proud ships that once carried Maine lumber to every port are a few decaying hulls by decrepit wharves

wheel shaft. They were usually operated by a man and a boy who thought that they had accomplished a good day's work if they sawed four thousand feet of lumber during twelve hours of hard labor.

In those days ship timber and ship masts were as important to the security and prosperity of a nation as oil is today. The size of naval ships was limited only by the size of timber that the shipbuilders could secure. Their speed and maneuverability were controlled by the strength of their masts.

From the days that Cromwell ruled England until the battle of Hampton Roads sounded the knell for sail powered navy vessels, the heads of the English Navy worried about the shortage of good ship timber. Conservation, as it is practiced today, was unknown. Years of careless cutting had depleted the magnificent oak forests, that had been an important factor in England's naval supremacy, to a point where

the nation was dependent on the Baltic countries for timber to keep their fleet in fighting condition.

But the ruling powers of the Royal Navy knew that this Baltic source was an uncertain factor. Hostile nations were constantly harassing the supply route and the worried naval men made frantic appeals for a conservation program that would save what timber remained in the depleted forests. These appeals sometimes brought about a half hearted conservation program but they were usually of short duration. For generations the English gentry had regarded oaks as a cash crop that supplied part of the income needed to maintain their way of life. Consequently, noblemen, church bishops, and even the Royal Family, looked upon conservation programs as an unnecessary nuisance that worked a hardship upon them.

When early explorers brought word of the fabulous timberlands in the New World, the harassed navy

They may atomize logging, but they'll always need lumberjacks





Bangor was once called the largest lumber market in the world. All that remains of that era is this statue to the river drivers

heads took immediate action to get some of the timber for their shipyards. As a result, mast shipments started almost as soon as the first colonies were established. The first sizable shipment was sent from Virginia in 1609 on a 300-ton ship called STARR. That was the beginning of an industry that flourished for more than 150 years.

The navy men soon learned that the discovery of the new timber stands did not solve all of their problems. Transporting the big masts over 3,000 miles of rough water was no small job. The English freighters had not been designed for such work and many of the masts had to be cut down to fit the holds of the ships.

This problem eventually led to the beginning of a new industry in America. It started when shipyards were built to construct freighters that were capable of handling the big timber. These giant "mast-ships" were the leviathans of the sailing fleets. They had a capacity of from 500 to 1,000 tons and were capable of carrying from 40 to 100 masts that were big enough for even the largest of the English fleet. When the first "mast-fleet" arrived in England, water front dwellers and the navy gave it a royal welcome.

After the transportation problem was taken care of the navy men turned their attention to protecting

the mast supply. When the first Dutch War started in 1652, the enemy began raiding the mast fleet and the English were forced to convoy them with fighting ships.

In the meantime, timber experts had been sent to America to survey the forests to locate the best masts. They unanimously selected the woodlands in the Territory of Maine, then a part of the commonwealth of Massachusetts, as offering the best in mast material. Since this territory was plagued by raids from French and Indians in Canada, the English began building forts to protect the mast supply. This protection lasted for more than a century and old records show that in 1725 men were drafted from all over New England to man the forts that were so vital to the English fighting ships.

Old records indicate that the Maine pines were of such enormous size that from eight to twenty yoke of oxen were used to transport them from the woods to the wharves. The

best were sent to England as masts as the others were sawed into timber to build more mast ships. These early shipyards were the foundation of a ship building industry that later turned out vessels that were famous all over the world for their speed and carrying capacity.

Maine has more than 5,000 rivers and streams which according to a hydrographic survey deliver 1,229,200,000,000 cubic feet, more or less, of white water through their falls. These watersheds were surrounded by 21,000 square miles of virgin forest land. With an unlimited market for timber, it was natural that the sawmill business began to boom.

At first, the mills were built close to the coast and this brought problems to the new communities. Any one who could scrape up a few dollars for capital built a mill and started operations. Before long the streams were so crowded with sawmills that there was no room for building new grist mills that supplied food for the communities. Consequently, laws were passed that gave the grist mill builders first choice of sites.

This forced the sawmill men to move into the smaller streams where water power was not powerful enough to work their machines efficiently. These mills were called "luncheon mills" and a rather stale joke of the times maintained that if the operator put a big log on the saw carriage in the morning he would have plenty of time to eat his lunch before the saw reached the end of the log.

The sawmill boom brought problems to the naval men also. When England granted a charter to Massachusetts in 1691 a clause in it stated that "all trees of not less than twenty-four inches in diameter a foot from the ground are reserved for the Crown." But when sawmill owners came to a pine that would yield boards or plank from two to

(Turn to page 54)



Portable cranes like this make logging safer today

CAMPAIGN GAINS MOMENTUM

Ohio members of AFA went into the lead last month in the mushrooming effort to fill up our nation's forestry schools

THE campaign of The American Forestry Association to fill up the nation's forestry schools continued to gain momentum last month, Vice President Fred E. Hornaday announced. Orders for the forestry career reprint published by *American Forests* continued to pile up. As the deadline (Sept. 15) for the big mailing to 28,000 high schools approaches, members can help by urging their local newspapers to draw attention to the campaign.

Ohio moved into the lead last month on the number of requests for individual copies of the brochure. One editorial alone in the Cleveland (Ohio) *Plain Dealer* is already responsible for over 100 requests from young Ohioans. "... For those suited and trained for it, forestry can be one of the more spiritually rewarding fields of outdoor work..." the *Plain Dealer* said and then conveniently provided the address of the association (919-17th Street NW, Washington 6, D. C.).

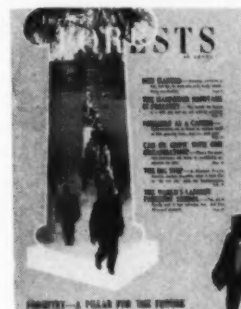
On July 30, Editor James B. Craig, of *American Forests* was the guest for the day of the Akron, Ohio, Rotary Club. Mr. Craig was invited to address the club by Dr. T. V. Gerlinger who invited him to the rubber capital as an "ambassador of forestry."

"I'm not an ambassador, I'm a salesman," Mr. Craig told the Rotarians. "Right now, I am trying to sell more young people on the importance of forestry as a bulwark of our nation's economy. Unless we manage our renewable resources wisely and well in the face of a mounting population the United States could become a have-not nation."

Congratulations continued to pour in at AFA headquarters last month on this drive for youth. Dean Henry J. Vaux, School of Forestry, University of California, wrote, "Of the several documents which have appeared in recent months outling forestry career opportunities, this is certainly the most thorough and most attractive for general circulation. The association is to be commended both for its recognition of a serious current problem in forestry career counseling and for its production of such excellent aid in meeting the problem."

As quoted in the forestry brochure, the late Chief Forester Gifford Pinchot at the close of his life wrote, that an important part of his work always was to "estimate and understand public opinion, and to arouse, create, guide and apply it." That is what AFA members are trying to do for the forestry career profession today and it is pleasant to contemplate that perhaps by the year 2000, when most of us are gone, some new chief forester persuaded to enter forestry as a result of our efforts will walk through Rock Creek Park as the advisor and confidant of another great President. To have recruited just one man of this caliber will have justified all the effort and all the expense of this effort a thousand fold.

A CAREER REPRINT FOR PROSPECTIVE FORESTERS



The Campaign of The American Forestry Association to encourage outstanding young men to adopt forestry as a career has resulted in the publishing of a 32-page Career reprint, containing among others the following articles from the MARCH issue of *AMERICAN FORESTS Magazine*:

MEN WANTED

THE MANPOWER SHORTAGE IN FORESTRY

FORESTRY AS A CAREER

CAN HE GROW WITH OUR ORGANIZATION?

THE BIG STEP

THE WORLD'S LARGEST FORESTRY SCHOOL

Copies of this Reprint are now available at the following post-paid prices:

- 1- 24 copies—25¢
- 25- 49 copies—23¢
- 50- 99 copies—22¢
- 100-499 copies—20¢

We will provide special quotations, plus postage, on 500 or more copies.

THE AMERICAN FORESTRY ASSOCIATION

919 17TH STREET, N.W.,
WASHINGTON 6, D. C.

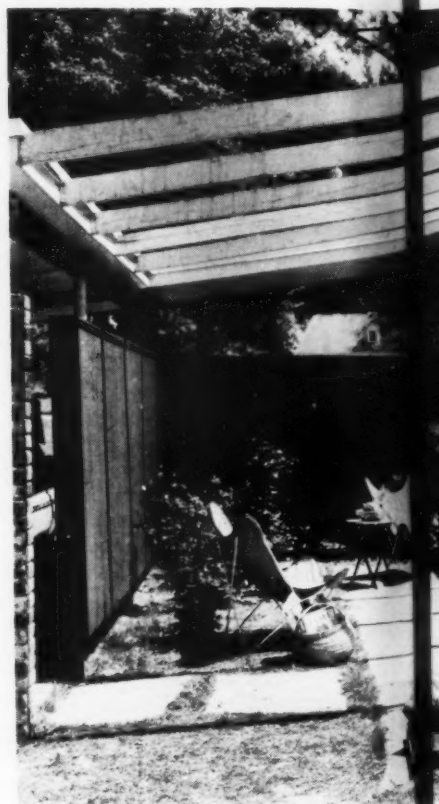


Photo courtesy of "Good Housekeeping" magazine

This fence screen allows only cooling breezes to invade privacy of your yard

A fence of substantial size will tend to cut down cross-traffic in the yard

A wooden fence should compliment both the architecture and garden arrangement

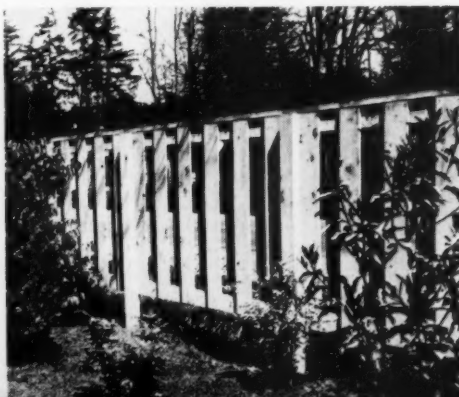


HOW TO BUILD A FENCE

Woven stockade fence offers maximum protection and design interest



Vertical board-and-board fence provides both privacy and ventilation

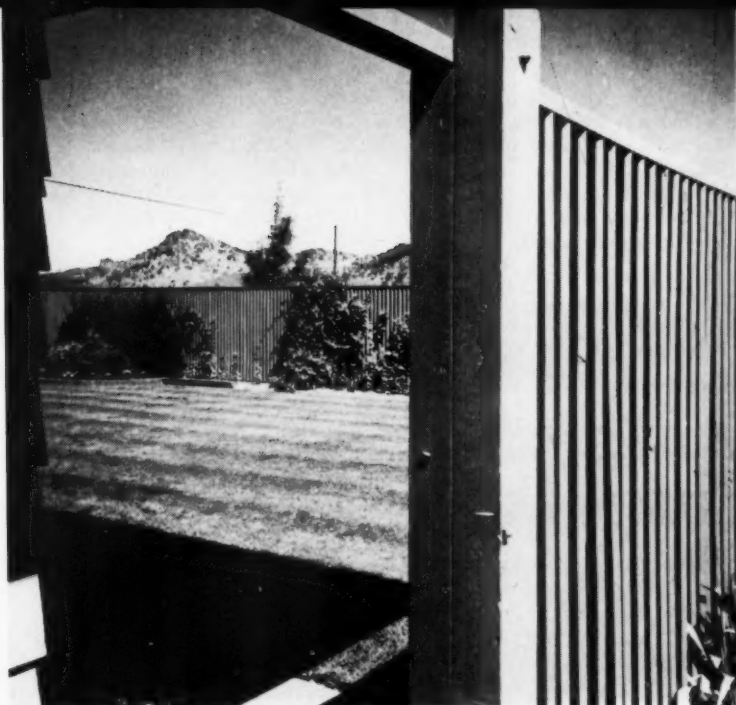


Modern basketweave fence is ideal frame for the contemporary house





Photo courtesy of "Good Housekeeping" magazine



High narrow-slat fence keeps children in yard and the strangers out

Wooden fences contribute aesthetic values, decorum, and practical usage

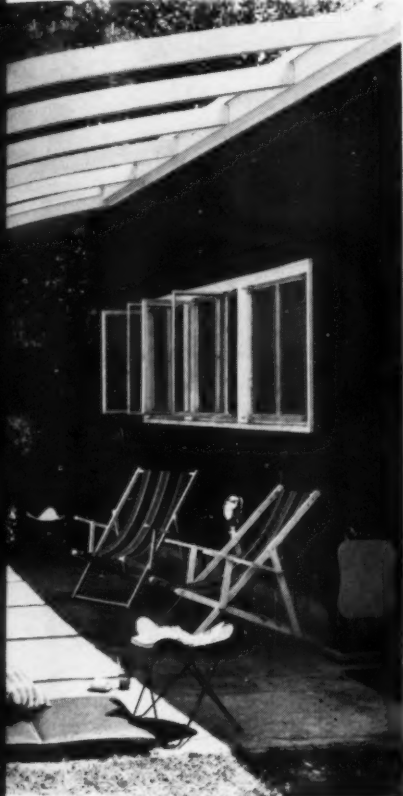
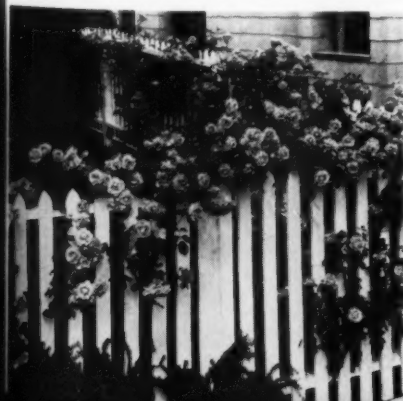


Photo courtesy of "McCall's" magazine

An "all-American" fence is the white picket. It is trim, low, inexpensive



Why not build a wooden fence on your property? It will certainly enhance the beauty of your house and grounds, and, depending on the type you select, may also serve to confine small children and animals or provide seclusion.

There is a great variety of patterns from which to choose, and all can be built and installed by the do-it-yourselfer. Ready-cut parts can be

provided by your local lumber dealer. He can also advise on the wood best suited to your job.

The most popular types of fences include: the picket fence, the board fence, the post and rail fence, and the louver or board-and-board fence.

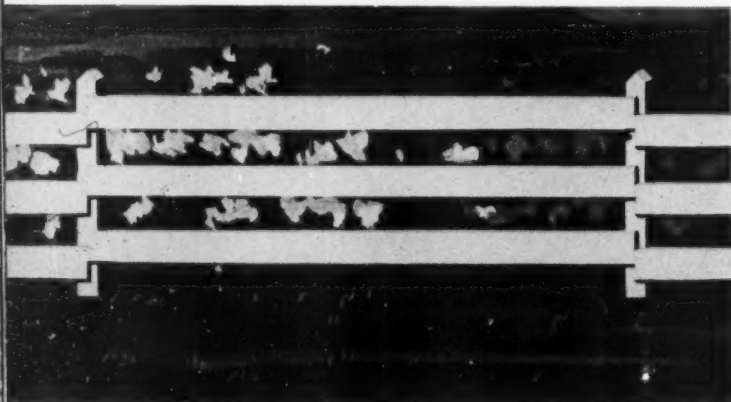
The picket fence is low, trim and inexpensive. It has been referred to as the "all-American" fence. The low picket fence is suitable for the

house with a low roof line if the purpose is decorative. If there is a job to be done—confine pets, restrain children, or privacy desired, the fence should be four feet or higher. Pickets customarily are separated by the exact width of the

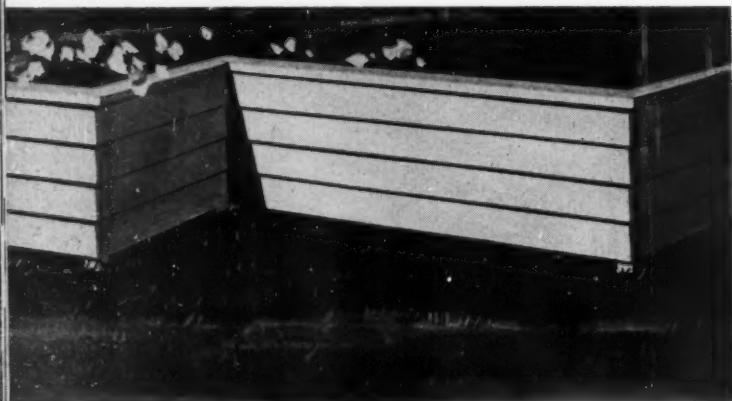
picket itself, and the posts are 4 x 4 inches set 8 feet apart, joined by horizontal stringers of 2 x 4 lumber.

The white board fence is used to enclose grounds of an acre or more, and its construction is simple. Posts

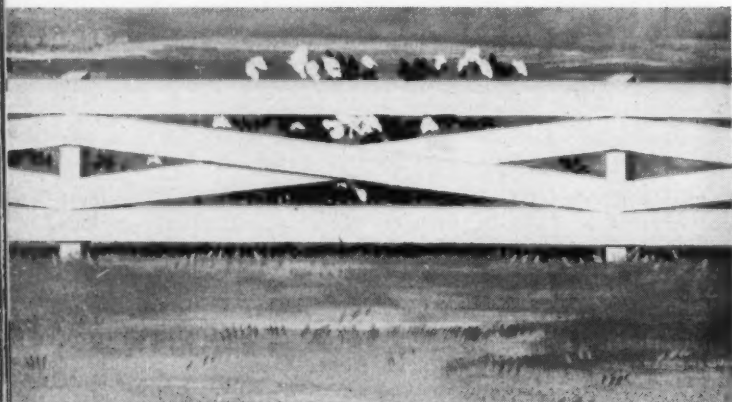
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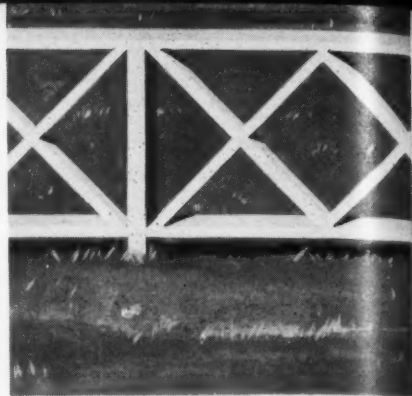
Harmonious designs can be worked out to meet the requirements of neighborhoods, thereby avoiding clashes in size or texture of wood fencing



The sound and ingenious construction of wood fencing around other homes in your area may suggest ideas that are applicable to your requirements



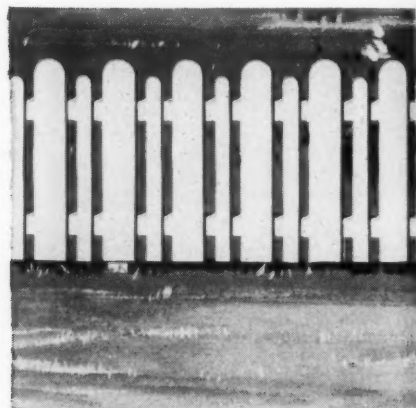
Vertical lines can become tiresome if carried more than 100 feet, so it may be wiser to use a stretcher fence—one with horizontal boards, rails



The stretcher fence, in various styles, is popular for borders

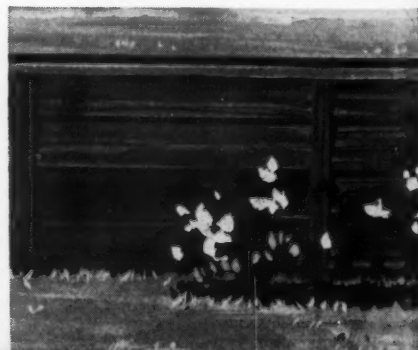


The wooden fence is attractive, long-lasting home improvement



A trim, low picket fence forms an ideal border for small houses

Natural wood blends into scene as backdrop for flowers and shrubs





Dr. Preston Bradley, pastor of Peoples Church of Chicago, will address group



Board Chairman, Rhineland Paper Co., Folke Becker, was AFA Award winner

Wisconsin Wood At Work

A spectacular wood exhibit and an array of outstanding speakers will be highlights of AFA's Annual Meeting

A spectacular exhibit of "Wisconsin Wood at Work" will be a special attraction at the 82nd Annual Meeting of The American Forestry Association at Madison, Wisconsin, on September 30 to October 2.

This exhibit is being built from the ground up for AFA's wood utilization meeting, and will feature displays of products as a primary objective of forest management. The lumber, plywood, and other wood products, i.e. other than wood fibre, portion of the exhibit will be designed to show the close relationship between the end wood product and forest management. Although this section will emphasize the development of commercial products as a major function of forestry, it will also give every consideration to all of the secondary benefits which forest lands provide.

Cooperating in supplying materials for this exhibit will be the Forest Products Laboratory, the Northern Hemlock and Hardwood Manufacturers Association, the Maple Flooring Manufacturers Association, and a number of individual lumber and plywood manufacturing organizations in the Lake States.

The Wisconsin Paper Industry dis-

play will be the largest part of the exhibit. This section will be concerned with the economic value of the paper industry to Wisconsin (employees, community dependency, position among states, etc.); and, the functions of Wisconsin's 400 paper grades, which may boast thousands of specific and unusual uses. "Wisconsin Wood at Work" in paper products used throughout the world will be the theme of this display.

A particularly interesting exhibit has been promised by the Wisconsin Conservation Department. These displays will be "live" exhibits, including wild animals and fish native to Wisconsin. Living trees will also be featured.

The "Wisconsin Wood at Work" exhibit will be housed in the hall just off of the lobby floor of the Hotel Loraine, headquarters for AFA's annual meeting. As an added feature, there will be a special "Trees for Tomorrow" exhibit in a room adjacent to the main exhibition hall.

Another exceptional feature of this year's annual meeting will be an address by Dr. Preston Bradley, pastor of the great Peoples Church of
(Turn to page 59)



Mr. John A. Beale is Chief State Forester for Wisconsin

Vice President, Crown Zellerbach, Mr. Edward P. Stamm





Giant oak leaf is for an exhibit which will give "worm's eye view" of forest floor



Spruce-fir forest group shows fallen birch with typical fungi



Man-made conifers peep thru ground in burned area



Putting a tree together. Douglasfir for Olympic rain forest exhibit, Washington



Jeffrey pine is made by applying plaster to burlap on wire frame



Bark goes over plaster coating for a Jeffrey pine

HOW TO BUILD A TREE

BEHIND the scenes at The American Museum of Natural History in New York a new exhibition hall devoted to the forests of North America is taking shape. When completed and opened to the public late next spring, it will be the largest and most comprehensive exhibit of its kind in any museum in the world.

Presenting the forest as a major biotic community, the Hall of North American Forests will tell of the natural interrelationships within

the community and of the external influences upon it including those of man.

Twelve life-sized, three-dimensional habitat groups will represent the variety of forest communities from northern Mexico to central Canada. Additional exhibits will depict such topics as forest insects and diseases, natural harvest, forest soils and soil life, and the weather in the forest. The principles on which foresters have based various methods of timber harvest will be the



Over 200 legs must be sewn to model millipede for exhibit



This exhibit shows that lumbering and recreation are not entirely incompatible



In spruce-fir habitat group, an aspen-birch forest, Ontario



Artist paints landscape in Colorado as backdrop for pinon-Juniper group



Landscape painting is transferred to wall of exhibit case at the Museum



Coast redwood group will show a scene in Humboldt Redwoods State Park, Cal.

subject of one exhibit, while others will show how man protects the forest and how forests serve man in a variety of ways.

Illustrated on these pages are some of the activities of American Museum staff members who are preparing exhibits for the new hall. The results of their work will be unveiled to the public in the spring of 1958, at which time *American Forests* will present a comprehensive view of the completed hall.

Southeastern coastal plains forest group (South Carolina) is perhaps the most realistic exhibit of all. It required hours and hours of planning





Salt River Watershed includes drainages of Upper Salt and Verde Rivers, in whose valleys lie huge reservoirs formed by dams, such as Roosevelt Dam shown above

Water yield developments in

BECAUSE Arizona lies in the arid southwestern part of the United States, Arizonans have been troubled with water problems and water shortages since the earliest pioneer days. These problems were naturally accentuated by the development of irrigation agriculture, which has increased tremendously in the 20th century. At about 1900, Arizona had less than 200,000 acres under irrigation. Between then and 1930, a number of storage

reservoirs on the major streams of Arizona made abundant supplies of water available by storing water in months of surplus flow for use in months of crop growth. Beginning about 1920, the ground-water reservoir was tapped for irrigation purposes. Since 1930, almost all new supplies of irrigation water have come from ground-water. This led to expanded development of irrigation, culminating with approximately $1\frac{1}{3}$ million acres of agricul-

tural land under irrigation in 1953.

While surface-water supplies stored in reservoirs have been fully used almost every year, the amounts pumped from ground-water have increased progressively. Even in the short period between 1946 and 1953, the amount of ground-water pumped in Arizona was doubled in quantity, totaling 4.8 million acre-feet in 1953. As a result, ground-water levels have dropped seriously; by 1955, ground-water had to be



Object of watershed management plans is to obtain the maximum yields of clear, usable water



Harvesting of mature pine and thinning dense immature stands will help increase water yields

The Salt River Watershed occupies about eight million acres of desert, range, and forest land

those
above

in Arizona

By H. G. WILM

pumped from depths averaging about 250 feet—about twice the depth of pumping in 1948. (Much of the material in this paper is quoted freely from "Recovering Rainfall—Part 1," published by the Arizona Watershed Program Staff in 1956.)

These thoughts mean that Arizona has been drawing upon its "water capital" for a good many years. As a result, far-seeing citizens

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Left, scene near Cairo, a popular resort community in the Catskill region

CATSKILLS



WHEN the trout fishing season opened in New York State in April thousands of anglers head for the Catskill Mountain Region. Then during the summer starting around Fourth of July and continuing until Labor Day an army of vacationists converges on the same region. When they leave there is relative quiet until the deer hunting season opens in the late fall. Then when winter sets in skiers and other winter sports enthusiasts come to the Catskills. This heavily forested, year-round playground has become even more popular now that the New York State Thruway has been opened. You can leave New York City by auto and within two or three hours traveling



Above, the snow has added new splendor to the Belleayre Mountain Ski Center



Four public camping areas are operated in Catskills by N.Y. Conservation Dept.



NEW YORK'S PLAYGROUND



By VLAD EVANOFF

Photos by New York State Department of Commerce

time you'll be in the heart of the Catskill region.

This playground occupies three thousand square miles and includes the counties of Ulster, Greene, Sullivan and Delaware. It is really surprising that such a large, unspoiled area can exist near a metropolis like New York City. But thanks to the rugged topography of the region which is dominated by mountains whose summits rise to 3500 and 4000 feet it has withstood early exploitation. And today the state of New York owns over 200,000 acres of forest preserve land in this area. The rest is privately owned by estates, clubs and various resorts which cater to vacationists. The green, fertile

valleys support many dairy, poultry and fruit farms.

But the forests are mainly responsible for the natural beauty and the major attractions of the Catskill region. Take any of the recreational activities such as fishing, hunting, camping or hiking and you'll find that the forests play a major part in insuring the continuation of these pastimes.

The Catskills remained a remote wilderness area for a long time. Even the Indians who called the region "Onteora" meaning "Land in the Sky" shunned the place. With superstitious awe they believed it to be the dwelling place of the "Great Spirit" and stayed away from the

dark, heavily wooded mountains.

The early Dutch settlers mostly stayed in the eastern foothills close to the Hudson River. It took 200 years after the first settlements before a Catskill industry was established. This was the tanning of leather which required the use of either oak or hemlock bark. Taken as a whole the early Catskill region was almost a continuous forest of hemlock.

After the war of 1812 men flocked to the Catskills by the thousands and numerous tanneries were established. The tall hemlocks fell under the axe and whole mountainsides were laid bare. The bark was stripped from the trees. It took one





Trout streams in Catskills produce many species of trout. Above is brown trout

cord of bark to tan ten hides. And one tannery could use 5,000 cords of bark in a year. So the hemlocks continued to fall regularly to supply this need for bark. After the bark was removed the trunks were left to decay and even today one can still find rotted remains of the great trees.

Then after the close of the Civil War export trade declined and most of the tanneries went out of business.

The fact that the best stands of hemlock were exhausted probably was a contributing factor. At any rate, the Simpson Tannery at Phoenicia was the last in operation and it ceased in 1870.

The hemlocks cut down for bark were replaced by hardwoods in about ten years. So during the last years of the tannery industry the making of barrel hoops from the hardwood saplings was begun. The bark peelers, at the end of their season in July would turn to the cutting and shaving of hoops. About 8,000 to 9,000 hoop shavers were engaged in this work during the height of the industry. It was estimated that as many as 60,000,000 hoops a year were turned out. This business continued until about 1900 when the invention of machines for cutting the barrel hoops from boards eliminated the hand shavers.

After the tanning and hoop making industries collapsed, attempts were made to develop manufacturing in the Catskills. The region had a fairly large population, water power and increasing quantities of hardwood timber. As a result many so-called "chair factories" were established. Although chairs were the principle item manufactured, other furniture, wooden pails, barrels and

firkins were also made. As many as 40 factories were in operation at one time making these items. Gradually they disappeared and today only one at Chichester is still in business making radio and television cabinets.

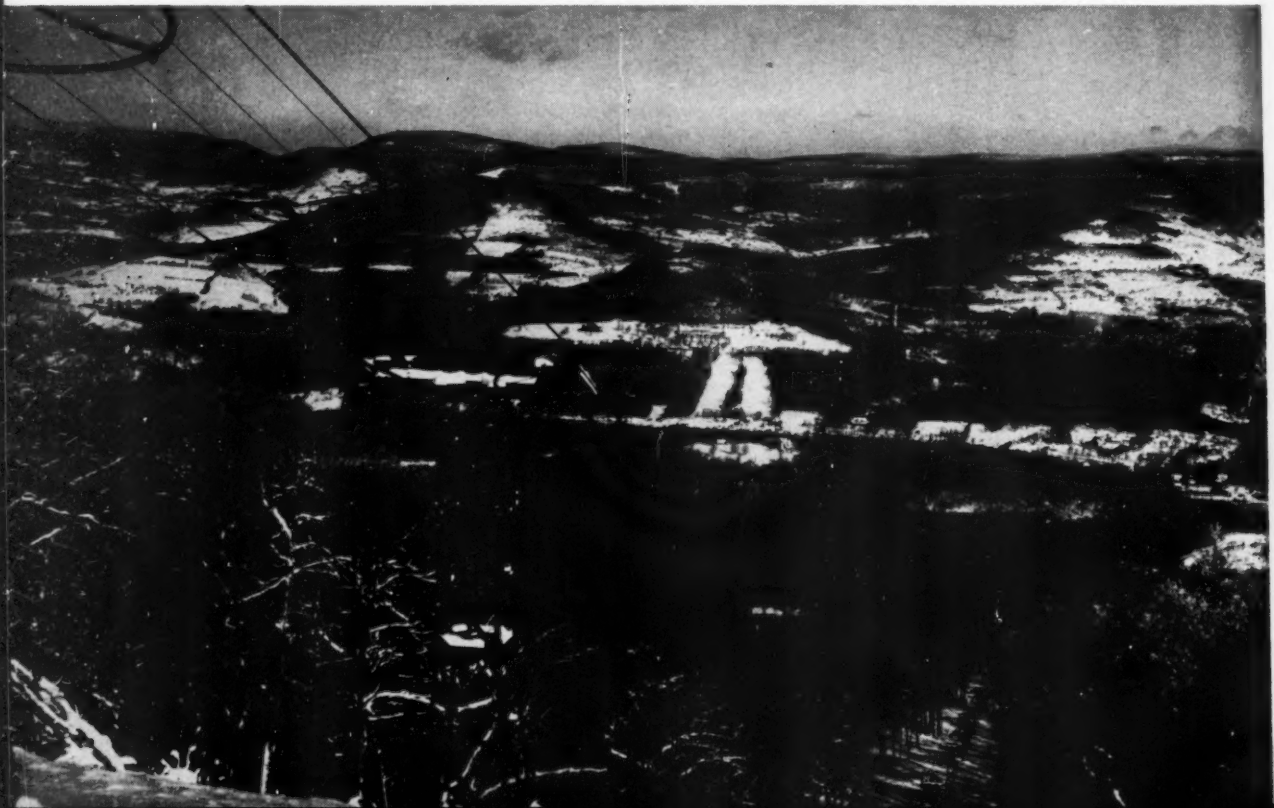
Other companies which flourished for a time were the acid factories. They also depended on the hardwoods which were cut down. These acid companies owned large tracts of timber and they continued in operation until the close of World War I. After the factories closed most of their land was sold to New York State and later became part of the Forest Preserve.

In the early days the Catskills also had giant white pine forests and the larger trees up to 200 feet were cut down and rafted down the Delaware River to the sea where they were used as spars in sailing vessels.

Today the Catskill forests consist of a preponderance of hardwood species except for the extreme high slopes where the conifers still prevail. Among the trees in the mountain forests, you'll find hemlocks, oaks, beeches, ashes, dogwoods, maples, birches, walnuts, ironwoods, sycamores, cedars, poplars, spruce, balsam and pines.

A survey by the State University
(Turn to page 53)

From the top of Belleayre Mountain the winter visitor sees a forested landscape of snow-covered mountains



Reading
about

RESOURCES



By MONROE BUSH

THE tragic loss of hundreds of lives in the Louisiana Hurricane should be a reminder—and we moderns need reminding—that the forces of the natural world are still supreme, that nature's strength is uncompromising.

In the technological society which we have today, with its fixation on man's fragile skills, the human unconcern for the rules and regulations of God's natural world approaches lawlessness. With serene irresponsibility, the great mass of us applauds every fresh assault on the order and balance of nature.

In recent years, fortunately, there have been rising clear, strong voices against this madness. Such utterly unique men as Harrison Brown and Ralph Lapp, Fairfield Osborn and Paul Sears, William S. Paley, Joseph Wood Krutch and Samuel Ordway, Jr., has each made his prophet's plea for a new look at Earth and the ecology of Earth's life. They have pleaded with us, before we are whisked by automation to the point of no return, to behave as debtors of the natural world, rather than its creditors.

But there are too few lines of communication between these prophets and the people, who for the most part accept as self-evident the illusion that abundance is inexhaustible—which makes such a book as *The River of Life* by Rutherford Platt (Simon and Schuster. 302 pp. \$5.00) an urgently important thing. Platt communicates because he fascinates.

He is a first-rate naturalist. Building on the base of a formal education at Yale, the Brooklyn Botanic Garden and Harvard's Gray Herbarium, Platt went on to travel and observe the world around. The

articles and books which have come from his desk have introduced millions to the wonders of nature. In 1945 he received the John Burroughs Award Medal for *This Green World*; more recently he has been an advisor for the Disney nature films.

I have never met him, but Rutherford Platt talks with the same easy charm with which he writes. I am sure there is no more delightful person to be found.

Here is a sweeping picture of life on earth in its Divine variety. Through these pages swim paramoecia and amoeba; and, to change the metaphor, here elephants plod and bees do their mating dance. The marvels flash by, creatures which are all but unbelievable. Yet the amusement is not ours alone. "The giraffe," the author cautions, "... would doubtless think that the human body is very funny with such a short neck. The chickadee would be justified in his opinion that a man is ridiculous in the way that he struts around on the ground."

And finally, lest we persist in laughing at these creatures, Platt asks, "Isn't it possible that an aphid, which can produce fifty babies at a clip without a male, would regard two people kissing as a ridiculous way of making an odd sound?"

I would like to wager the price of an afternoon on a stream bank that anyone who reads the first dozen pages will finish the book. But this word of warning: the dust-jacket blurb is misleading. It says: "The story of earth's company of living things—and their miraculous power to survive and multiply." It does not strike me that this is exactly the case.

Platt offers many fantastic glimpses of "earth's company," and in chapter after chapter you are given evidence of a "miraculous power to multiply." Yet this is not a "story" in the usual sense of an unfolding, interlocking chain of events. *The River of Life* is not an exposition of either evolution or ecology, though it contains a hundred illustrations of each. The author's approach is romantic rather than scientific, but his facts themselves are most certainly of science.

And here, in what the stuffy might consider a weakness, I find the book's great charm. Remember that the advantage of being on the other end of Mark Hopkins' log was in the informal and deeply human discourse of the man, in the free wanderings of his perceptive mind. This is the sort of reward to be found in reading *The River of Life*. It is no textbook. It will not make you a student of nature, let alone a scientist. What it will do, however, is give you a reverent awe for "earth's company of living things."

Take this paragraph, for example: "Intelligence is inherent in protoplasm. It is part of the same phenomenon that makes an amoeba flow by extending and withdrawing its finger-like lobes and then wrap itself around food; or causes a mushroom living in underground blackness to elevate an umbrella for throwing out its spores in the sunshine and wind; or gives the willow tassel elasticity to quiver in the breeze as though it has the idea of attracting more bees that way. Every living thing must have its own brand of intelligence to cope with its own problems."

The appearance of a book that says this sort of thing for three hun-

dred pages can—if anything can—spark a reverent awe for all living creatures. It is another line of communication between those who know that man cannot dislocate the natural order of things in his technological intoxication and escape the penalty, and those to whom a respect for nature is rubbish.

But Rutherford Platt does not push conclusions. Like the good teacher, he says: "Here it is, what do you make of it?" You draw your own conclusions, one of which will inevitably be that the natural world is something more than a warehouse of supplies for man's exclusive comfort and amusement.

This insight, this new reverent awe for living things, may not forestall man's accelerating rape of what billions of years were required to evolve. But here are many of the ingredients of understanding; and for you the reader understanding means freedom and dignity, if not success.

Forests and French Sea Power, 1660-1789, by Paul Walden Bamford. (Univ. of Toronto Press. 240 pp. \$5.00.)

It is startling to come across Louis XIV wearing the mantle of a conservationist. Yet, according to Prof. Bamford, so assiduously did this monarch strive to protect the dwindling resources of his forests that "men were unseated from office, condemned to pay heavy fines, and required to make restitutions . . . for damage the forests had sustained. Some offenders were condemned to be sent to the galleys . . . and at least one went to the block."

Our specifications have changed, for no longer do we need fir masts 120 feet in length by 40 inches in diameter at the heel to rig those wallowing old fortresses called ships-of-the-line, yet timber in many forms remains as essential for the national welfare today as it was when sailors went down to the sea in wooden ships.

Forests and French Sea Power reminds us that conservation was not discovered by Pinchot and T. R., but was of great concern to Charles V in the 14th Century. Techniques in resource management have changed, of course, but more than that, our attitude has mellowed. Instead of ordering offenders to the galleys, we are content to call a conference or appoint a committee.

Tree Care, by John M. Haller. (The Macmillan Co. 224 pp. \$5.95.)

The post-war suburbanite can, for the most part, be distinguished on three counts: his indifference to privacy, his conversion to Modern Republicanism, and his passion for grass. No Japanese in his rice paddy, or Egyptian in his plot of cotton, ever labored with greater zeal than does the commuter in the midst of his quarter-acre lawn.

There are all-too-few voices crying in the Bluegrass, "Lift up your

"With imagination, we may hear the music of the tree world in the pattern of a tree. It starts with the high, silvery notes of fluid entering myriads of white root hairs. That magnitude of sound is far beyond the reach of our ears, but sound there must be for the same reason that air passing through organ pipes becomes a sounding medium. In the background you hear the rapid rhythm of the dance of the molecules of minerals dissolved in the water, the Brownian movement which we can see with our own eyes through a microscope. Then comes a deeper resonance as the sap moves upward through the longer tubes in the heavy wood of the trunk. Its symphony rises to a crescendo when the tree is stretching in the spring of the year, accented by the expanding cells, the crystallizing of new wood, the cracking of bark. After that comes the third movement, which repeats with variations the theme of the first. The tempo changes, the pitch grows steadily higher as the sap flows through the tapestry of the branches and through finer and finer tubes of the tiniest twigs and leaf veins—and fades into sunlight. This is the melody of the tree's challenge to life."

**Rutherford Platt,
*The River of Life***

eyes unto the trees." And while John M. Haller is not quite so explicit, this is substantially what he has undertaken to cry in his remarkably useful handbook, *Tree Care*. Perhaps the next phase of suburban civilization will be a general up-grading of interest from lawn to limbs; and if so, *Tree Care* will surely rival Benjamin Spock's *Child Care* in popularity. I am not familiar with any other publication that offers such detailed, precise instruc-

tion for the homeowner in the nurture and preservation of his trees.

Haller is the founder and president of a tree-care company; and though he indicates where the amateur's usefulness ends, and the expert's begins, I would not be surprised if the practical thoroughness of his handbook did not supplant many a call to the "tree doctor"—which, if this means healthier trees, will be of no concern to this particular expert who so clearly loves his subject.

So if you own only a Bible, a dictionary, and a cook book, but have outgrown grass and lifted your eyes to your trees, let me urge that the next book you should buy is *Tree Care*.

And another point: proper forest care depends, nationally, on a popular acceptance of its importance. But graphs and charts depicting cut-versus-growth ratios will never spark a popular enthusiasm for America's remaining forests. This must begin with a love and real respect for specific trees, the trees in Harry Homeowner's yard. When he has discovered his trees he will discover our forests. Consequently a book such as *Tree Care* is more than a useful handbook for the individual; it is a way by which the science of forestry can establish itself in the popular imagination.

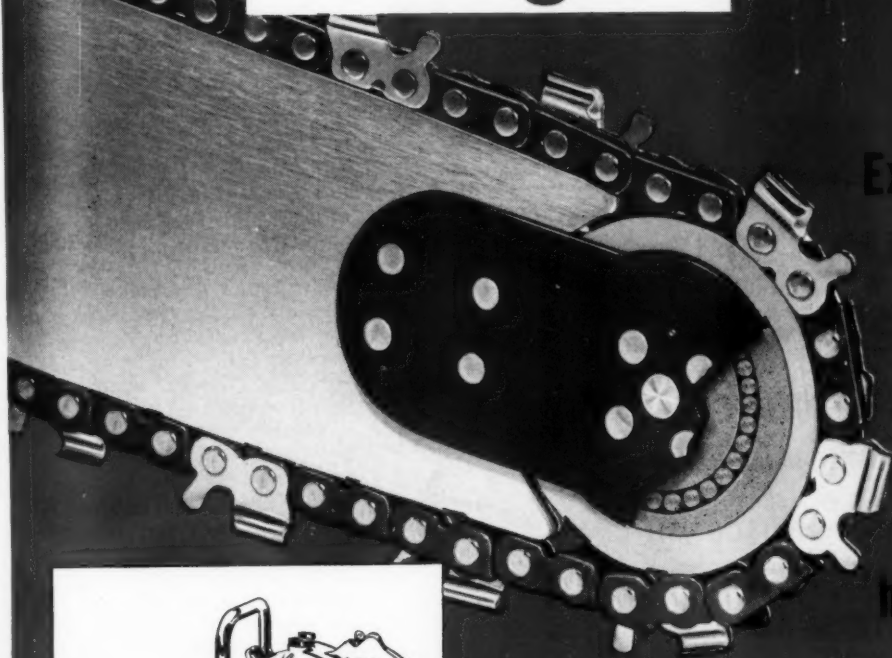
Country Year, by Leonard Hall. (Harper & Bros. 208 pp. \$3.50.)

This is a reminiscence of the four seasons on a working farm in the Ozarks. It is a simple, gracious, honest book.

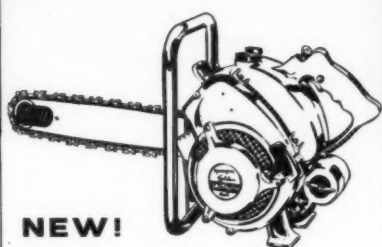
Leonard Hall (no relation to the politico) came to Possum Trot Farm in mid-life, a former business man become popular nature columnist for the St. Louis *Post-Dispatch*. Unlike the preponderance of city men turned agriculturists, however, who bring only money to their rural hobbies, Hall brought to Possum Trot a dedication to hard physical labor and a profound devotion for God's natural world which distinguished him at once as a real farmer and a real human being.

Country Year is not going to eclipse either Thoreau's *Walden* or Aldo Leopold's *A Sand County Almanac*, for it lacks the depth and literary beauty of them both. Yet in one respect it may be more useful than either of these classics: it can give to farmers and their families a fresh insight into the joy which a farm offers those who tend it wisely—if they will but seek this joy with their spirits' eyes sharply sensi-

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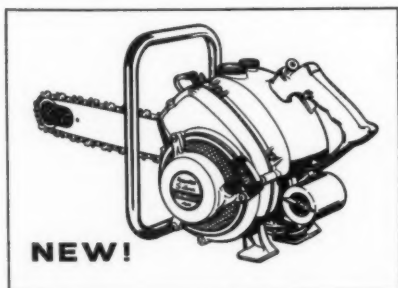


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Soils and Soil Fertility (2nd. Ed.), by Louis M. Thompson. (McGraw-Hill. 450 pp. \$6.50.)

Plant Pathology (2nd. Ed.), by John Charles Walker. (McGraw-Hill. 707 pp. \$10.00.)

Fundamentals of Horticulture (2nd. Ed.), by J. B. Edmond, A. M. Musser and F. S. Andrews. (McGraw-Hill. 456 pp. \$6.75.)

Textbooks are too often limited in their use to classroom students; and too often, also, laymen depend for their continuing education upon "popular" books which do not supply systemized information.

These new editions of three McGraw-Hill books are excellent foundation studies for the interested layman. The amateur reading a textbook will not remember all the facts and figures with which it is stuffed, and there is no need he should. What he does get is a broad glimpse of the scientific composition of his particular field of interest, and all his further "popular" readings will make more sense because of it.

Should the Potomac be Dammed?

(From page 7)

it is uneconomical to depend on small dams up stream. Distribution of water from one focal point is most advantageous for the total development of the river." Mr. Kaylor added that "municipal and agricultural needs must be considered first, and what's left over can be used for recreational development."

Actually, these hearings were rather sparsely attended, compared to those of several years ago. Few people came to support the dam proposal. Most it appears have the same opinion as Mr. Blair Lee, III, city planner of Montgomery County, Maryland, who told *American Forests*, "It is a highly technical problem and lay people should not interfere until all the facts have been established. We want to know a great deal more about this situa-

tion before we come to a conclusion. We want to be right."

The Washington *Evening Star* expressed this sentiment in an editorial which read, "As a Leesburg farmer, James Symington, put at the hearing in Fairfax, the Potomac must be considered as 'belonging to all the people of the watershed in spite of local interests.' That is the concept which must govern the search for a solution, whether it is a high-level dam near Riverbend, a series of low-level dams farther up the river, or combinations of these and other schemes capable of producing the best results."

However, two other Washington newspapers, also presumably reflecting public opinion, took differing views of the situation. The *Washington Post* wrote, "For the present it seems to us that the emphasis should be upon cleaning up the river, regulation of its flow by means of lesser dams and conservation measures farther upstream, and development of its recreational resources." But, the *Washington Daily News* declared, "This community had better start doing something about insuring a safe water supply. We're running short of time, as well as water, and some sort of impounding and purification of the river's waters is the only solution in sight. We don't know whether the dam should be high or low, but it would be nice if so much of the debate didn't involve trivialities or downright misrepresentation by real estate speculators . . . Another phony argument, it seems to us, is the one that says a high dam shouldn't be built because it would submerge part of the dear old C & O Canal, another beauty spot, according to canal tramps. Well, years ago, when we had more energy and time for such things we hiked that miserable canal all the way from Washington to Great Falls and back, in one day. About 30 miles. And a hotter, duller trek, by smelly mud puddles and thru clouds of gnats and mosquitos we've never, praise be, had to endure."

Be that as it may, supporters of the historic C & O Canal in its natural state have already demonstrated on occasion that they are not an inconsiderable force.

In spite of the varied opinions about Riverbend Dam, the "wait and see" attitude seems to prevail. In the Sport Fishing Institute's *Bulletin* for July, the lead article declared, ". . . In short, we find it difficult at this stage to reach an in-

formed conclusion as to the desirability of such a reservoir (as would be formed by the dam). . . . The anticipated 10-foot drawdown would create bare bank around the reservoir. This has not proved a deterrent to large-scale recreational use in other areas. . . . But we are concerned over a tentative proposal by the engineers to erect supplementary retention dams . . . In our opinion this would be wholly ill-advised. Instead of having objectionable 'mudflats' we'd then have far more objectionable *mudholes* . . . They

soon deteriorate badly as recreational areas. Experience in many other reservoirs indicates that impoundment could be expected to enhance sport fishing potential manyfold. . . ."

Although the engineers believe Riverbend the best site to consider initially, they will continue to study alternative sites in cooperation with interested groups and organizations. They expect to submit a partial report in about two years.

AFA's viewpoint? Let's wait for all the facts to come in.



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Battle of the Wilderness

(From page 15)

lieve it is necessary to revise a tested pattern of administration and management. We recognize that what the conservationists are trying to do here is to put a little more yeast (in the form of public support) in the bread. But the danger here, as we see it, is that too much yeast directed to one category of public lands use (wilderness), might upset the whole management loaf. We believe that the Wilderness Bill in its present form, while it may appear innocuous to thousands of laymen, actually marks a departure from previous tested patterns of management, particularly on the national forests, in that this bill would tend to develop a legislative history in a direction of a single and exclusive use on a perpetual basis. This bill, AFA maintains, could set an unsound precedent by establishing a special or restricted use on specific geographic areas through congressional action. In this respect, the bill goes far beyond existing congressional authorizations for timber use, for grazing, for watershed protection and other uses. Asks AFA, are conservation organizations, which previously stoutly maintained that use of public lands is a "privilege," not a "right," now seeking the "rights" they have denied to other users in the past? While AFA does not believe that enactment of this bill would necessarily mean that other users would quickly acquire similar "rights," it does believe that enactment of this bill would give greater validity to anticipated requests for other legitimate users for similar "rights" and similar councils. The end result, over a period of time, could be gradual weakening of professional career services which up to this time have done capable jobs under the many advantages provided by administration under the executive branch. Taking proponents at their word that they think the agencies have done a good job and that they merely want to help them do a better one, AFA honestly believes conservation associations can best help those agencies by leaving the mechanics of management and administration strictly alone. In brief, if something is already running smoothly and efficiently, why start tinkering with the spark plugs?

How do the key agencies most concerned, Interior and Agriculture, react to this proposed bill?

Dr. R. E. McArdle, Chief, Forest Service, Department of Agriculture, reported, "S. 1176 (The Wilderness Bill) would tend to freeze the status quo with respect to present wilderness-type areas. The bill would do this by: a) including existing national forest wilderness, wild, and roadless areas in the National Wilderness Preservation System, and b) permitting a single House of Congress to override secretarial judgment as to subsequent modifications or eliminations of such areas. Furthermore, the House of Congress which disagreed with the secretary's recommendation could by resolution override the wishes of the other House if it were in accord with the secretary's judgment.

"The bill would establish a National Wilderness Preservation Council which would have no real powers but would impose added record keeping, paperwork, and expense upon the Department of Agriculture and other executive land-administering agencies.

"The secretary would be prohibited from transmitting recommendations for administrative changes in wilderness areas directly to the Congress. He would be required to submit those recommendations to the council which would in turn transmit them to the Congress. There are two objections to this: 1) The secretary should have the authority

to make changes in wilderness areas. They should not be subject to Congressional veto except by act of Congress; and 2) if administrative changes are to be sent to Congress for approval, they should be transmitted directly by the secretary and not sent indirectly through another organization.

"S. 1176 would strike at the heart of the multiple-use policy of national forest administration," Dr. McArdle continued. "It would give a degree of Congressional protection to wilderness use of the national forests not now enjoyed by any other use. It would tend to hamper free and effective application of administrative judgment which now determines, the use, or combination of uses, to which a particular national forest area should be devoted. If this special Congressional protection is given to wilderness use, it is reasonable to expect that other user groups will subsequently seek Congressional protection for their special interests."

Speaking for the Department of Agriculture, Chief McArdle asked that the bill not be passed.

Conrad L. Wirth, director of the National Parks, submitted the statement of Under Secretary of Interior Hatfield Chilson that was sent to Senator James E. Murray, chairman, Committee on Interior and Insular Affairs, on June 18 of this year.

"Because of our favorable report to your committee with regard to S. 846 for the establishment of a National Outdoor Recreation Resources Review Commission, and for other reasons stated in this report, we do not recommend enactment of this proposed legislation," Mr. Wirth told the committee.

Mr. Wirth stated that "In our opinion, enactment of this proposed legislation in its present form would defeat the purposes for which it is intended. This would result, we believe, from conflicts and dissension that would arise concerning the use of a large portion of the federal estate that would be included in the proposed 'wilderness' system. For example, many of the areas named, such as the wildlife refuges and Indian lands, and hereafter explained, do not qualify, or should not be classified, for particular reasons, as wilderness areas. Consequently, the inclusion of such areas

Mr. Wirth's Interesting Proposal

"Now, I say that subject to possible criticism from my good friend, Dick McArdle, over here, it is entirely possible, when you start classifying some of these lands, that some of his national forest areas which are now termed 'wilderness' under the Forest Service might be classified into the type of wilderness that we try to have in national parks; and consequently it might be that some of those areas might be included in the National Park System.

"But, be that as it may, the report of the secretary believes, and I concur in it very strongly, that we should look at this objectively and make a complete analysis and put the land uses in their proper categories and put them under the proper management."—Conrad L. Wirth, director, National Parks, at Senate hearing on the Wilderness Bill.



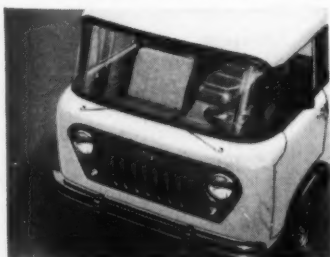
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in a proposed wilderness preservation system would serve only to bring about controversy and dissatisfaction. We feel that in order to proceed equitably with respect to the selection of particular areas for wilderness status, and in order to insure the permanence of that status with respect to each area, a thorough and objective study should first be made of each area suggested for this type of land use.

"It was for this reason that we recently recommended to your committee that S. 846 be amended to recognize that phase of outdoor recreation and appreciation which is one of the real benefits that accrue to our nation as a result of the natural and scenic beauty of these wilderness areas. We indicated that a 'survey of this type, if it is to be of lasting value, in our opinion, should be conducted objectively and without preconceived ideas regarding the outcome thereof.'"

At this point, Mr. Wirth injected an off-the-cuff comment into the record (see box on these pages) to the effect that future study might well show that some of the present national forest wilderness areas might fit nicely in the National Park System. The comment was received with something less than enthusiasm by some AFA members, particularly old timers, created a wave of comment in the South Building, and has already resulted in letters of inquiry from as far away as Washington, Oregon and California. However, there is no concrete evidence as of this moment that supports the thinking of those who maintain that the next move of the wilderness bloc will be to transfer national forest wilderness areas to the parks system.

Like the Agriculture Department, Interior opposed interposing an additional agency, a National Wilderness Preservation Council, between the Congress and the responsible administrative agency. Mr. Wirth told the committee, "The activities of the council would involve cumbersome time consuming and expensive procedures that we believe would not accomplish efficiently the purposes intended."

The national parks are probably the only type of reservation that Interior administers that could be said to fit comfortably into the wilderness category, Mr. Wirth said. "However, the Congress has long since enacted legislation for protection of the National Park System. It is our considered opinion, therefore, that this proposed wilderness legislation would add little, if any-

thing, to the protection, as wilderness areas, that the National Park System now enjoys. In fact, the inclusion of the national parks in a general system of wilderness areas, particularly if that system includes areas of lesser significance and importance—will have the effect of placing the national parks on a less firm foundation of protection than has been already provided by law."

As regards installing wildlife refuges in the wilderness category, Mr. Wirth said "In formulating this proposed legislation, there appears to have been a mistaken belief concerning the purposes of the national wildlife refuges and the recognized and established methods for their management. These areas do not fit into the general pattern of wilderness areas for the reason that in order to preserve our wildlife population—the basic purpose of such refuges—it is necessary to manage actively the wildlife refuges for the production of food and the retention of water for our wildlife population. Areas so managed necessarily must disturb the natural 'wilderness' conditions that exist in these areas, but we find no alternative to this type of management in order to preserve and protect our wildlife population." As to installing Indian lands under the wilderness banner, the bill completely ignores the rights of the Indians, he said.

What did other users of the public lands have to say about the Wilderness Bill?

Ival V. Goslin, engineer-secretary, Upper Colorado River Commission—"... H. R. 1960 and related bills pose one of the greatest threats to the conservation, development, utilization and management of water resources that the Western states have had to face. To be specific, these activities are strictly prohibited forever by the terms of the proposed legislation ... H. R. 1960 is too rigid ... H. R. 1960 is unnecessary."

Harry Mosebrook, forester, American Pulpwood Association—"... Unnecessary and unwise."

W. Howard Gray, American Mining Congress—"We in the mining industry are unalterably opposed to the 'locking up' of natural resources of any kind from development for the public good."

S. E. Reynolds, state engineer of New Mexico, and secretary of the Inter-State Stream Commission of the state of New Mexico—"... the provisions in this bill, if enacted, would have serious consequences, adversely affecting the economic development of the state of New Mex-

ico and the welfare of its citizens. The state of New Mexico strongly urges this committee to act unfavorably on the proposal to create a National Wilderness Preservation System ..."

A. Z. Nelson, forest economist, National Lumber Manufacturers Association—"If it appears reasonable to the Congress to establish a National Wilderness Preservation System as proposed in this legislation, then it would appear equally reasonable that the Congress also establish with similar 15-man councils a National Timber Production Area System, a National Grazing Area System, a National Mineral Area Development System and so on for water, fish, game, campgrounds and other resources on or uses of the federal lands."

Radford Hall, executive secretary, American National Cattlemen's Association—"... 'Gentlemen, we are living in a world that is moving too fast, changing too fast that we can afford for you to lay the dead hand of such negative legislation on such a large area of a growing nation.'"

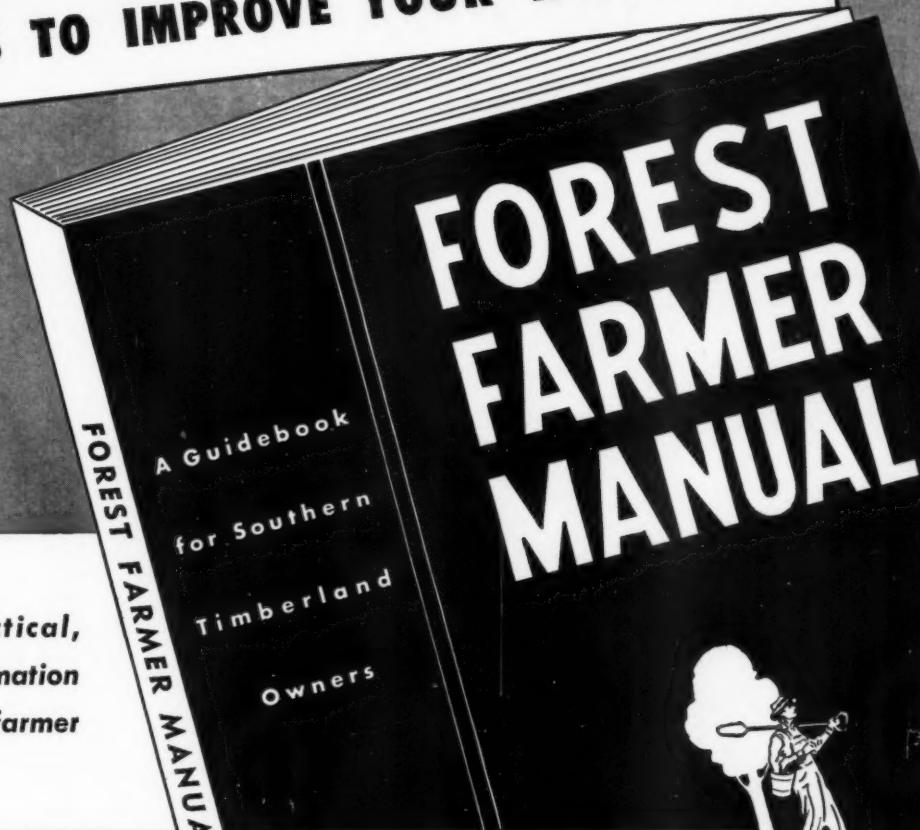
Paul M. Dunn, technical director of forestry, St. Regis Paper Co. and former dean, School of Forestry, Oregon State College—"... This legislation constitutes a 'single purpose' and a 'special privilege' for those few users at the expense of other citizens. Wilderness areas are necessary for the preservation of wilderness values, but the size and management of these areas should be determined by policies which are flexible enough to meet changing economic conditions. The multiple-use management of federal lands is the most equitable to all uses and users of these lands."

William E. Welsh, secretary-manager, National Reclamation Association—"We are opposed to this legislation because we believe it is fundamentally unsound, undemocratic and opposed to the best interests, particularly in Western states, of the local areas most vitally affected."

Two other witnesses who opposed the bill were William E. Berry, chief, Division of Resources Planning, Department of Water Resources state of California, and Gordon A. Weller, executive vice president, Uranium Institute of America.

Two of the biggest blocs of supporters for the bill came from the Eastern and Western ends of the nation. Michael Nadel, representing approximately one million sportsmen in the New York State Conservation Council, said that much of the force of the movement for the

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preservation of wilderness came from New York starting with an indignation meeting in 1894 that resulted in an amendment to the state constitution. With one stroke, this amendment created the 2,220,000-acre Adirondack Preserve which, in the phraseology of the amendment, "... shall be forever kept as wild forest lands." These lands "shall not be leased, sold, or exchanged, or be taken by any corporation, public or private, nor shall the timber thereupon be sold or removed." Later the words "or destroyed" were added, to prevent flooding of the preserve.

The Adirondack Preserve was pointed to by Mr. Nadel as the classic example of protection of wilderness by constitutional action. Since 1894, and as recently as 1955, the state had resisted every attempt to breach this constitutional barrier. In 1955 the state defeated a proposal to build a dam in the preserve by a vote of 1,500,000 to 600,000. Mr. Nadel told the committee that "Those who wish to change the 'forever wild' provision have an opportunity under the constitution to make their play."

The second big bloc that appeared in support of the bill consisted of those western outdoor groups (about 25,000) including the Sierra Club, Federation of Western Outdoor Clubs and others headed by David Brower, of the Sierra Club. One witness, Mrs. Pauline Dyer, of the Federation of Western Outdoor Clubs, was sent East to testify at the personal expense of club members. Her testimony was the briefest at the hearing. She merely said her group was resoundingly "in favor of this bill" and retired.

Dr. Olaus J. Murie, of Moose, Wyoming, and president of the Wilderness Society, was another individual who came to the hearings at his own expense to urge Congress "... to put wilderness legally on the map of the United States." In a plea for "quality," Dr. Murie told the committee that a big gap exists today between the thinking of administrators—or the administrative point of view—and the view of millions of individuals who are not interested in administrative procedures but who are interested in preserving matchless wilderness areas in their present wild and roadless state.

The American Planning and Civic Association had been listed as being in favor of the Wilderness Bill but testimony by General U. S. Grant III declared that "... we think the

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term *Wilderness System* is a misnomer. Are we now to have systems of wilderness, systems of scenery, systems of scientific, historic and archeological areas superimposed across the federal agencies which now administer systems containing these areas?

"We suggest that wilderness be defined in the bill without trying to create a system," General Grant said. "We favor legislation which will declare that it is the policy of Congress and the federal government to preserve wilderness areas in their natural state for the use and enjoyment of the people now and in the future . . . we are strongly opposed to any super council or commission which would be an additional authority to which matters would have to be referred and which would have no responsibility itself for producing results, and might easily become a means of exerting pressure from the outside on hardworking and much worried responsible agencies . . ."

Finally, the General Federation of Women's Clubs with its one-and-a-half million membership said, ". . . like every thoughtful group, we want the wilderness areas maintained and preserved . . . but we think such areas should not be so controlled as to prevent the people who really own the national forests, from being able to enjoy them. We think it is possible the people could be legislated out of their rights."

Continuing this line of thought, Mrs. R. I. C. Prout, national president, said "The plan of setting up a National Wilderness Council seems too restrictive in the long run to the General Federation, because we think it would tie the hands of administrators and it would be legislation for special interests which the General Federation of Women's Clubs have opposed through the years. Special interest legislation

hinders the multiple use objectives and policies of the Forest Service which actually serves the greatest number of people.

"We believe the Forest Service, with its over-all interest in the conservation of all our resources, has and will continue to serve the best interests of the people much better than the suggested National Wilderness Preservation Council, because of their knowledge of the total picture. We believe such a council would weaken our national conservation program and would in fact, put a certain amount of restraint and limitation on our people who have a right to enjoy to the fullest our national resources. The general federation believes that a National Wilderness Advisory Council would be of great value in safeguarding our national resources."

We realize that this is already a lengthy report but you members asked for it—people who are on both sides of the fence or on the fence as regards this particular issue. As a firm advocate of wilderness as presently administered and as an equally firm opponent of the Wilderness Bill, The American Forestry Association from the first has doubted the wisdom of forcing these bills to the hearing stage at this particular time. Furthermore, nothing happened at last month's hearings to cause the association to change its mind. The Senate hearings were only minutes old when Forest Service Chief McArdle, who was testifying against the bill, was obliged to come to the defense of his own wilderness areas due to a line of senatorial questioning that seemed to feel that maintenance of roadless wilderness areas meant depriving people of a chance to see their rightful heritage. In a well-phrased reply that demonstrates anew the im-

portance of keeping these matters safely in professional hands, Dr. McArdle, said among other things, that we must remember that to many people "wilderness is a state of mind" in that there are thousands of people living in such places as New York City who have never seen a wilderness area and probably never will but who like to know they are there.

This injection of wilderness into the "state of mind" realm completely mystified the senators carrying on the interrogation and their very expressions shouted, "That's the most impractical statement I ever heard in my life." Nor was their spirit of disquiet lessened by the comment of Senator Neuberger, in the chair at that moment, that there are "qualitative as well as quantitative values involved here."

The Senator from Oregon then proceeded to leave that one dangling in mid air which was a mistake because he, and other witnesses equally sensitive to conservation needs, have no right to assume that many members of Congress and many millions of Americans have any real awareness of the importance of wilderness in a way of life. In short, one suspects that to millions of gasoline-burning Americans such matters as the "qualitative" value of wilderness are just so much gobbledegook; and one feels more and more strongly that trying to cram a Wilderness Bill down their throats is the wrong way to go about the task of publicizing the value of this little-known commodity and that this pitch, actually, could eventually boomerang on wilderness enthusiasts.

This would mean that wilderness, in which practically everyone at the hearings apparently believes, would be the loser. Which would be a real calamity for America.

Letter from Canada

(From page 8)

black flies the rest of the season. We visited sprayed areas and didn't see or feel a black fly, but when we dropped into the unsprayed areas, the pesky things ate us up.

Well, those first three days on the job were more or less typical of the first six months. I visited member company woodlands operations and talked with woodlands personnel and some senior management from Nova Scotia to British Columbia in order to see on the ground the major logging and forestry

problems in Canada, and to appraise the opportunities for their solution. Interspersed with these travels to woodlands operations were visits to research organizations: woodlands laboratories of member companies, the four forest schools of Canada, and headquarters and research stations of both federal and provincial governments. Since the first of the year, I have been spending more time reading the logging and forestry research literature, programs of projects,

annual reports and numerous technical reports. With this background, I prepared last month the first draft of a proposed Program of Woodlands Research for the institute. And this summer, I shall be discussing it with various forestry and logging personnel prior to preparing a final draft for presentation to our Advisory Panel and, through them, to our Board of Directors.

Of course, all this preparation has had to be fitted in with administration of our current woodlands

research program and all types of meetings. Fortunately, I am blessed with a splendid staff, which though presently low in numbers, is high in quality. It includes three experienced foresters, besides myself, full time and one forestry consultant, two senior mechanical engineers, and one full-time and four part-time hydraulic engineers. One forester has had a long experience as a woods manager with a pulp and paper company, another is a tree physiologist, and the third is an ecologist. The mechanical engineers are experienced designers presently busy on logging mechanization. We are working towards full-tree logging with two or three machines doing the whole job of converting and transporting standing trees to pulpwood, or chips, at the final landing or mill. Another project has to do with debarking sawlogs at small mills so that slabs and edgings will be available for pulp. The forestry consultant has just prepared an up-to-date supplement for logging mechanization in Russia. Our forester/logging engineer has recently published a book on *The Transportation of Pulpwood in Flumes*, and is now working on a logging atlas for Eastern Canada. Our other two foresters are involved with such projects as forest seeding and planting techniques and equipment (an appreciation), the influence of the growth stimulant gibberellic acid on hybrid poplar cuttings, some studies on mineral nutrition, and selection cutting. Other work during the year has had to do with soil scarification, with blowdown, and with controlled burning. And in addition, the institute revises yearly its directories of current woodlands research and experimental work in the Canadian pulp and paper industry and in Canadian universities. The directories and revisions are distributed to member companies and other contributing groups.

To complete the record, I delivered the theme address "Forestry and Canadians" at the National Forestry Conference in Winnipeg last September. Also, I spoke to the Rocky Mountain Section (Calgary, Alberta, September 21) and the Ottawa Valley Section (Ottawa, Ontario, November 17) of the Canadian Institute of Forestry, and to the Forestry Club of the University of Toronto (January 17) on the topic "Foresters and the Public."

These talks are a continuation of my AFA work. On March 26, I had the great pleasure of moderating a panel on University Research at the annual meeting of the Woodlands Section of the Canadian Pulp and Paper Association. The panel members were my good friends the deans of the four Canadian forest schools, Deans: George S. Allen (University of British Columbia), J. W. B. Sisam (University of Toronto), L. Z. Rousseau (Laval University) and J. Miles Gibson (University of New Brunswick).

We are very happy in Montreal. It is a big city but it is one of the handful of North American cities like New Orleans and San Francisco which have an individual flavour and charm. The bilingualism is delightful; and Mrs. Besley and I, struggling along when need be on our high school French, are continually amazed at the fluency of others who seem to pass naturally from one language to the other, and back again, without stopping for breath. We bought a house in a delightful residential town about 25

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miles from the heart of Montreal. Our part of Senneville is only about 5 years old and is characterized by attractive homes and lovely lawns and gardens. Most of the lots are 100 feet wide by 200 feet deep, but being on the end, ours is five-sixths of an acre. We have just finished our lawn, but we left a fairly wide screen of natural woods at the back—ash, elm and maple—and a little on one side where it adjoins the woods of Macdonald College.

At present I am commuting by train to Montreal every day, and it reminds me of my daily trek to AFA. But by November we expect to be in the new 2¼ million dollar institute building at Pointe Claire—about fifteen minutes by car from my home.

Our son, Bill, is in the regular U. S. Army and is stationed in Alaska. He was able to pay us a two weeks' visit over Christmas and

New Years before he went, and he thoroughly enjoyed skiing in the Laurentians. Mrs. Besley and I recaptured our youth with a lovely sleigh ride for miles. The team was full of life, the sleigh bells jingled merrily, the sunshine was bright, the air brisk and sparkling, the snow crunched delightfully, and we were suitably supplied with fur robes. The coachman was resplendent in a big bear coat. What a wonderful way to spend the day after Christmas!

Please remember me to my friends at AFA. I think of you often, even if I write seldom. As you see, I like it up here and like what I am doing now. Meanwhile, I think you all are doing a swell job and that AFA is growing in strength and usefulness every day.

Sincerely,
Lowell Besley

Catskills — New York's Playground

(From page 38)

of New York College of Forestry at Syracuse has shown that about one-quarter of the Catskill forests is seedling and sapling and one-half is pole-timber, leaving one-quarter of the entire forest area in stands of saw-timber size. The area has 750 million board feet or 500 million cubic feet of merchantable timber. Over half of this is not available to industry because it is on state forest preserve lands. Only about one-fourth of the board foot volume and one-eighth of the cubic foot volume of sawtimber is made up of conifers. About 10 per cent of the Catskill merchantable board foot volume is white pine. Hemlock comprises 15 per cent of the volume. While hard maple and birch dominate the hardwood timber volumes comprising approximately 30 per cent of both board foot and cubic foot volumes, other species utilized to a lesser extent include beech, soft maple, elm, ash, basswood and oak.

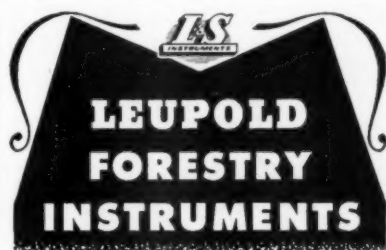
The state of New York formed the Catskill State Park to conserve the natural charm, forests and wildlife of this region. The park now includes 581,000 acres of which the state owns 217,207 acres. It takes in portions of four counties: Ulster, Greene, Delaware and Sullivan. Most of the notable mountain summits are within the park's boundaries.

Two major activities in the Catskill State Park are hiking and camp-

ing. The New York State Conservation Department maintains many public campsites and open campsites throughout the area. Such campsites have proven so popular that in recent years there have been long waiting lists of campers anxious to make use of these facilities.

The hikers have many forest trails which are maintained for easy passage in most seasons of the year. The open camps and lean-tos are located on many of the "Central Catskill Trails" for over-night stopping. One of the most popular trails is the one on Slide Mountain, highest peak in the Catskills with a summit of 4,204 feet. The original trail was used by naturalist-author John Burroughs and has been incorporated into the present-day trail. Near the summit of Slide Mountain a bronze plaque set in a rock commemorates Burroughs' ascents.

In the winter skiing is an attraction which draws many winter sports lovers to the Catskills. Several skiing centers have been developed on the mountain slopes. The village of Phoenicia is the headquarters for skiers since it is surrounded by the most popular skiing centers. The most famous of these is the Belleayre Mountain Ski Center located fifteen miles west of Phoenicia. It has a 3000-ft. chair lift up the side of Belleayre Mountain. From the top you get a sweeping view of the Catskill Mountains. The chair lift also op-



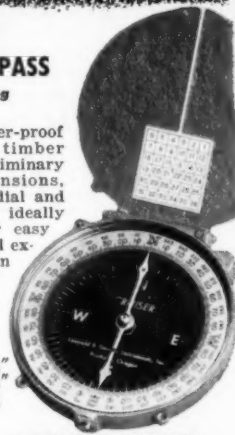
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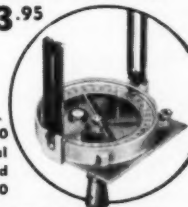


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Following is a paragraph suitable for incorporation in wills:

"I hereby give, devise and bequeath _____ to The American Forestry Association, Washington, D. C., a non-profit District of Columbia corporation, or its successor, or successors, for the purpose of promoting the corporate activities of said Association."

THE AMERICAN FORESTRY ASSOCIATION

919 Seventeenth Street, N.W.
Washington 6, D. C.

erates during the summer months to accommodate the thousands of tourists and vacationists who want to take in this sight.

Another magnet which draws many thousands to the Catskills are the trout streams. Such streams as the Esopus, Neversink, Beaverkill, Willowemoc and the branches of the Delaware River are world famous. They have been mentioned and described in countless books and publications by fishermen.

In these days when many trout streams are spoiled by farming, pollution, expanding cities and towns, the waters of the Catskills become even more important in providing fishing for the growing army of anglers. Trout streams require cold, clean water and the high altitude and forests of the Catskills make it possible to maintain low water temperatures favorable to trout. This is one of the few strongholds of the brook or native trout which thrives best in the coldest waters. But brown trout and rainbow trout are also present in the Catskill streams.

The Catskill region is also an important source of water for New York City's thirsty millions. Three new reservoirs have been built in recent years; the Neversink, Pepacton and Rondout. Old roads, homes,

farms and villages have been inundated by the rising waters behind the dams. The Ashokan Reservoir northwest of Kingston was built many years ago and is a popular scenic attraction. It is circled by a road, and a bridge or weir runs across it. The aeration basin which shoots 1,600 misty sprays of water 20 feet into the air is a beautiful spectacle which attracts thousands of visitors each year. Still others come to fish for the small-mouth bass which are plentiful in the Ashokan. Almost the entire 40-mile shoreline of the reservoir is surrounded by evergreens.

Naturally in the heavily forested Catskills the danger of fire is ever-present and several fire observatory towers are maintained by the State with a corps of forest rangers and fire wardens keeping a constant watch. Campers, hikers and fishermen and others visiting the area are subject to strict rules.

And to protect the natural beauty and value of the Catskill Forest Preserve other rules prohibit visitors from defacing, removing or destroying any tree, shrub, fern, flower or rock. Song birds and their nests are also protected. Fish and game are taken only during the legal seasons for the Catskills.

Ships and Sawmills

(From page 26)

three feet wide they were inclined to forget the Royal edict.

Consequently, the Crown passed the "Broad Arrow" law that made it a felony to cut any tree bearing the Royal mark. Any person having boards or plank more than two feet wide in his possession was presumed to be guilty of violating this law. In 1695 Edward Randolph was appointed Surveyor of Pines and Timber in Maine, with full authority to enforce the law. But by this time the determined sawmill men had worked inland following good streams and rivers to all parts of the state.

Randolph soon found that it was impossible to enforce the law in such a vast territory. When he was not around the millmen sawed the big pines into lumber and then split it lengthwise so that their lumber would be under the twenty-four inch measure. In 1706 the Crown gave Randolph some help by appointing John Bridger Surveyor General of all forests. But the sturdy millmen continued to wink at the twenty-

four inch law and a second Surveyor General was appointed. Bridger had been lenient in his administration, but Dunbar soon became famous for the severity with which he dealt with offenders. This only made the millmen more hostile and they continued to fight the twenty-four inch law until the revolution settled the matter once and for all.

Many of Maine's largest cities grew from sawmill settlements. Bangor, which is the second largest city in the state, was founded in 1769 when a farsighted sawmill man built a mill on the Penobscot River. He could not possibly have found a more promising location. The Penobscot River is the largest and most important drainage system in Maine. This watershed holds one-fourth of the area of the state within its bounds. Its basin is 160 miles long and in places 115 miles wide. In 1769 this waterway was surrounded by 2,500,000 acres of virgin pine that had never been touched by an axe.

When word that this rich terri-

tory was open got around a mill stampede that was equal of any gold strike boom ensued. By 1791 the little sawmill settlement had grown large enough to be incorporated as a city. Its whole business life was centered on the lumber business. According to an old legend when a Bangor boy of that era who was asked to name the principal crops of Maine he replied: "Lumber, ships, and sailors."

Bangor was once known as "The World's Largest Lumber Market," and the title was well deserved, for it had everything needed for the business. In addition to an unlimited supply of timber and water power, it had a water channel that was safe for ships drawing as much as twenty-six feet of water. When they were loaded with 2,000,000 or more feet of pine, the big windjammers sailed safely down the Penobscot and carried their cargoes to all of the ports of the world. Much of the lumber went to the West Indies and when the vessels returned they brought back cargoes of rum, molasses, rare spices and many other luxuries.

Like any lusty frontier town, Bangor in its early days was a rough and rugged settlement with a lot of raw edges. In the daytime the steady hum of sawmills intermingled with the sailors sea chanties, but when night came the town put on a new face. Husky lumberjacks with their pockets bulging with easy money roamed the streets in search of a little excitement to break the monotony of their way of life. Wine, women, and free-for-all fights were all a part of the night life of the young city.

The free-for-all fights were definitely not pink tea affairs. They usually started when a group of lumberjacks tangled with visiting sailors. However, if no sailors were around the timber boys would pick a fight with lumberjacks from another crew. Some of the fights were rough and bloody with double bladed axes, peavies, wood hooks, and caulked boots, as weapons.

Unfortunately, during the mad boom era nobody thought of conservation measures that would insure a continued supply of pine. As a result an unbelievable amount of timber was wasted. Sawmill men, anxious to get a reputation for supplying extra good lumber, discarded slabs thick enough to sell for first class lumber in today's market. When a lumber crew got down to the muddy bottom of a log boom, they set the lower logs adrift rather than

to wash or handle them while they were dirty. This wanton waste soon depleted the magnificent stands of pine and by the time the Civil War started, spruce was King of the Penobscot.

These wasteful practices also brought other unhappy results. While some of the waste timber was salvaged by water-front dwellers for building homes and for sale as a sideline income, much of it remained in the river. Over the years it became water-logged and sank into the mud. Eventually, the channel that became filled with soggy pine had to be removed. A government dredger worked for more than a year to remove the wasted timber at a big expense to the taxpayers.

The ending of the pine era was the finish of Bangor as a world lumber market. Today about the only reminder of the old days to be found in the city is seen in the Pierce Memorial statue of three river drivers breaking a log jam with axe, cant-dog, and peavy. This bronze monument to the men who played such an important part in founding the city was given to Bangor by Luther Pierce who was a log driver in his younger days.

Shortly after the Civil War ended,



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the first pulp mill was built on the Penobscot. That, along with the introduction of steam powered mills, marked the beginning of the end of the ships and water-powered sawmill era. The little mills vanished almost overnight after the more efficient steam mills were built. The ships passed out of the picture more slowly and nearly a half century passed before railroad expansion put them out of business.

The pulp business grew rapidly and today paper and allied products are the largest industry in Maine. It supplies 27% of the industrial income of the state and the outlook for continued growth is good, since the nation had a per capita consumption of 421 pounds of paper in 1955.

The first pulp mills, like the early sawmills, were driven by water power. But in 1897 Garret Schenck founded the Great Northern Development Company and that organization eventually changed the entire paper making process. In 1899 the name of the business changed to The Great Northern Paper Company. A year later, on November first 1900, Garrett Schenck threw the switch that started the first pulp mills in Maine to be powered by electricity.

Eight days later, the mill produced

its first roll of newsprint. Then, and for many years afterward, this was the largest newsprint mill in the world. Its original capacity was 240 tons of newsprint per day, but at the present time the Great Northern produces 1,300 tons of newsprint daily. Plans are under way for an expansion that will increase this amount by 500 tons daily.

Today the Great Northern is the largest producer of newsprint in the United States. It manufactures one-third of all the newsprint in the country, and it is Maine's largest enterprise. It is on the American Institute of Management's 1955 list of best managed companies. It has developed hydro and hydro-electric installations on the Penobscot River with a rated capacity of 130,000 horsepower, and has approximately 60,000 horsepower of undeveloped sites still available on the same river.

This giant paper producing machine is supplied by the Great Northern forests which encompass more than 2,250,000 acres of woodland. This is approximately 11% of the state of Maine; an area comparable in size to Delaware and Rhode Island. This massive woodland empire is under the management of trained foresters who put in force conservation measures that will insure a continued supply of wood.

In addition to the land owned by the company the Great Northern has access to the wood produced on five million acres of privately owned woodlands.

The owners of these woodlands also practice conservation measures that will insure a continued supply of pulp. It seems probable that the Maine spruce will never meet the unhappy fate of the English oaks and colonial pine. Working in co-operation with the Maine Forest Service these woodland owners practice selective cutting and take every precaution to guard their timber against fire and disease.

Tree farming programs, which are sponsored by the American Forest Products Industries, are an important part of Maine conservation work. These programs give recognition to the men who practice good woodland management by issuing a Tree Farm certification for their woodland. These lands are dedicated in a public ceremony and a Tree Farm sign is erected on a suitable spot.

Looking into the future Maine woodland owners feel that the business which brings \$500,000,000 into the state each year will be a safe and sound industry for them, and for the generations that come after them.

Trees for the Future

(From page 22)

nursery—runs 18,400 to the pound.

But another problem—that of the birds, was so serious that distribution difficulties were quickly forgotten. You see, birds go nuts over pine seed. This means that immediately after the seeds are planted by an eight-row planter, another machine must follow and cover them with a litter of pine straw.

This gives some protection from the birds. Also, it gives some shade to the tiny plants as they come up. Later, it forms a mulch.

But, while the seeds were germinating, the birds had to be kept away. The whole farm complement, from manager to lowest laborer, dropped all other duties and stalked through the 20 acres, throwing firecrackers to the birds.

All of which makes Southwestern thankful to the Chinese who invented the crackers, regardless of what the birds may think of the Chinks.

After the firecrackers ceased popping, came the problem of water; then weeds; then insects.

Coping with all these evils is quite a job.

For instance, when the trees fail to get three inches of rainfall during a week, they must be irrigated. Which wasn't too much of a problem early in the season. As a mat-

THE Committee on Elections to nominate directors of The American Forestry Association for 1958 is now accepting nominations from the membership. The committee has designated September 1, as the deadline for nominations. Mr. George L. Drake, consulting forester of Tacoma, Washington, is chairman of the Elections Committee. Mr. Maurice K. Goddard, Secretary of the Pennsylvania Department of Forests and Waters, and Mr. R. Vance Miles, Jr., Forestry and Public Relations Manager of the Gulf States Paper Corporation, are the other members of the committee. All nominations should be addressed to the Committee on Elections, The American Forestry Association, 919 Seventeenth Street, Northwest, Washington 6, D. C.

ter of fact, so much rain fell that for a time, Mr. Washburn was ready to pray for it to stop.

Then, the weeds. They sprouted quickly. Some were killed with chemicals but the majority had to be pulled out by hand. According to nine youngsters busy at this task on June 12, 1957, they had a real back-breaking job.

Then, of course, there are always the insects. They must be sprayed. And the trees must be sprayed now and then for rust and other diseases hungrily waiting to spring and consume them.

So it goes, from planting time in March, through the hot months into fall. Then water is withheld in order to bring the trees to a semi-dormant state. As November arrives, they are ready for lifting.

A machine loosens the earth beneath them. Laborers pull them gently from the soil, shaking the dirt loose and stacking them in bundles. Then the tiny trees go to the packing shed where they are graded, packed in bundles of from

one to two thousand trees and shortly afterwards, they are being planted on the blank spaces on Southwestern's lands.

Machines plant them in rows six feet apart with eight feet separating each tree in the row. And, in time, a forest, orderly and beautiful, beneficial to the earth which nurses it, will spring up to protect that same earth and, someday, to become a boon and blessing to man.

Thus, if all goes right, Southwestern will grow around 20 million trees per year from now on. These will be planted in blank spaces at first; later, they will replace trees which have been harvested.

Incidentally, Southwestern will not hoard all its trees to itself. The company plans to give away at least a million trees each year to timber growers who have land on which they wish to plant. A grower can obtain as many as 5,000 trees from Southwestern. The only requirement is that they buy a like amount, at \$5 per thousand, from the State Nursery.

That is pretty much the picture of Stillman Nursery, named for Charles L. Stillman, Chairman of the Board of the East Texas Paper and Pulp Company.

However, there's still the story of how Southwestern Settlement and Development Company did its about-face.

As noted, Southwestern was set up for the purpose of selling "useless" land. This was in line with practices of other big companies. For instance, Long Bell Lumber Company sold a lot of land around De Ridder, Louisiana, and the land was set to raising strawberries.

Southwestern decided general farming would be a better thing for its land, so it set up a handsome demonstration farm near Kirbyville, Texas. The farm had a recognized farmer to head it; it had all the latest equipment and fertilizers. It was a magnificent setup.

As work began, brochures were prepared and sent all over the nation, urging people to come to Kirbyville and become landed gentry. Many came but few stayed. Trouble was, land suited for raising pine didn't do too well when it came to raising other crops. So, the project flopped.

Then Southwestern tried grapes. Again, the land wouldn't have them. So that project blew up.

So with peach orchards.

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Fire wardens agree, both Federal and State, that crawler tractors and trucks do exhaust dangerous incandescent carbon which starts thousands of costly fires.

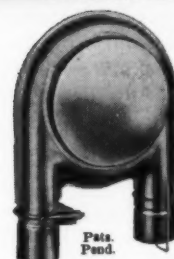
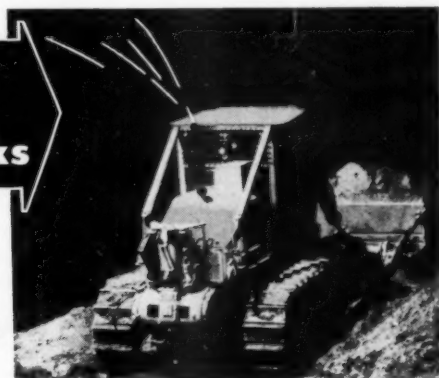
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(Membership includes a subscription, for the duration of the membership, to the monthly magazine AMERICAN FORESTS)

To The American Forestry Association
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I nominate _____
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whose address is _____

_____ for Membership
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to Membership which outlines the privileges and benefits of membership in
The American Forestry Association.

My Name as Nominating Member _____

My Address _____

DUES: Subscribing membership per year, \$6; Two years, \$10; Contributing membership per year, \$10; Sustaining membership per year, \$25; Life membership (no other dues for life), \$150; Patron membership (no other dues for life), \$1000. Canadian postage 25c extra per year, Foreign 50c extra per year, on Subscribing memberships only.

success, Southwestern subsidized Satsuma plantings around Silsbee. Had success, too. Enough that the town became known as "Satsuma Valley." Growers flocked in and began producing quantities of the fruit.

Then Mother Nature, who hadn't been consulted, stepped in and froze all the trees. Rather than replant, the growers pulled out.

So it went. Every attempt to sell the land flopped. Oh, a good deal was sold—some 200,000 acres—but nothing like what the company hoped for.

Which, as it turned out, was a blessing in disguise. Just as was the Depression. For, during the Depression, there was no such thing as being able to sell land. Fact is, you could hardly give it away. So, those 660,000 acres lay idle, much of it forgotten.

When the Depression finally eased, Southwestern checked its holdings and lo, there was a lot of second-growth timber. Doing well.

Immediately, Judge W. E. Merrem, a soft-spoken graduate of the University of Texas Law School who has headed Southwestern for

25 years as its general manager, sent crews into the field to check this new growth. To see what could be expected.

Their reports were enthusiastic. Timber could be grown. They'd seen it with their own eyes.

Judge Merrem and his associates became convinced they possessed a hen capable of laying eggs of gold, provided they helped her.

Which, of course, they began doing, wholeheartedly.

As a result, Judge Merrem today has no problems of selling land. Rather, he must tend to problems of forestry, conservation, marketing of timber and the like.

His assistant is O. R. Crawford, who started his career studying aeronautical engineering. However, Crawford's hobby was law and it led to his working with land titles, taxes and public relations as a department manager with the Houston Oil Company of Texas. This led, naturally, to his work with Southwestern.

The company has 110 employees, most of whom are busy with forestry, with producing poles and piling

and timber. The balance of the employees attend to engineering, office work and, of course, the nursery.

As for the latter, it is thriving. While one 20-acre tract is busy growing pines, another like-sized plot is being rehabilitated with crotalaria. When this crop of pines has been disposed of, another planting will begin on the 20-acres now being built up by the crotalaria.

Meanwhile, this year's crop of pine trees will have been planted on some 15,000 acres of land, thus repairing damage man has so heedlessly done in the past.

Thus, we have the picture. Here we see how the thinking of man has changed,—from a policy of "cut out and get out" to one of intelligent cutting and replanting. They are working to replenish the earth and give the entire economy of this area an upward boost.

As we observed earlier, "only God can make a tree." But Southwestern Settlement and Development Company will be helping him to make trees. . . . For a long time.

You can bet on that. Because it's only good business.

Forester's Notebook

(From page 23)

Yacolt fires be prevented?

4. Minimizing the losses caused by insects and diseases. Part of this can be accomplished when good road systems and better utilization enable forest managers to keep the woods in a healthy growing condition. This must be supplemented with better knowledge of natural parasites, life cycles, environmental effects and nutritional deficiencies.

5. Putting young second-growth stands into productive use. When should thinning begin? What will it cost? What will the products be?

What are optimum growing conditions?

6. Correlation of timber production with other forest uses and long-range planning to meet mounting population pressures. On the opening day of trout season 166 automobiles were parked at a single bridge across a little stream. Recreation seekers are increasing ten percent annually, and Chambers of Commerce predict 40 million visitors to the Pacific Northwest in the near future. Before the roads are built, forest managers need to consider where

they are going to accommodate so many people lest the vegetation be trampled into the ground.

Fortunately these problems are being taken in stride. Each month the region's 2,000 professional foresters meet in small groups for critical review of mutual interests. And the subject of deepest concern to these tin-hatted timber beasts? What manner of man will follow in the land of Paul Bunyan, for theirs is the No. 1 industry of the region, and they aim to keep it so.

Conserving America's Forests

(From page 19)

Tree planting accomplishments are forging ahead under the impetus provided by the soil bank program. The state foresters are proceeding with renewed determination to attack the job of planting some 60 million acres in need of forestation.

Tree planting signup under the soil-bank program has been heavy in some states and light in others. Florida is the third state in magnitude in this tree planting signup and furnishes an outstanding example of

tree planting interest and cooperation.

Farmers basically want to make the wisest use of their land and a considerable acreage will be shifted to trees. Some farmers are expected to move slowly in making this shift and signup is expected to continue until the deadline of 1960. State foresters are confident that signup will increase and are going forward accordingly.

Actual soil-bank signup through

April 15, 1957, in Florida was 49,764 acres and is expected to increase rapidly. The comparable national signup was 562,165 acres. Florida is estimated to have 480,609 acres that should be shifted from cultivation to trees, and at least one-half of this is expected to be signed up in the soil bank program.

I feel there is a justification for the funds that have been requested, and that our nation will benefit by the expenditure.

Wisconsin Wood at Work

(From page 31)

Chicago which he founded in 1912. He is one of the most prominent civic leaders of Chicago and is in constant demand before important groups and meetings. AFA members will have the pleasure of hearing Dr. Bradley on October 2, at the barbecue in Devil's Lake State Park.

As an orator, Dr. Bradley has few peers. His method of speaking is unique in that he never uses notes or a manuscript, and all of his work is extemporaneous. Forty years ago Dr. Bradley lectured on the once famous Chautaugua Circuit, an institution all but forgotten. On that circuit he appeared on the same platform with William Jennings Bryan, Clarence Darrow and other orators of that caliber.

Dr. Bradley has been called a "Chicago Institution." Perhaps no man in that city has impressed his personality more upon the life of Chicago. He is beloved and honored by the people of every race, faith and creed. He has concentrated his work in Chicago and the Middle West, and has participated in many civic groups and organizations. He is presently: member of the Board of Directors of the Chicago Public Library, member of the State Normal School Board of Illinois, chairman of the Chicago Council Against Racial Discrimination, member of the Mayor's Commission on Race Relations, and member of the Illinois Prison Investigation Commission.

Three more outstanding speakers have also been selected to address the AFA annual meeting. Mr. Folke Becker, Board Chairman of Rhineland Paper Company, will speak on "Trees For Tomorrow." Mr. Becker has been president of Trees for Tomorrow, Inc., since its founding in 1944, and is a recipient of AFA's Conservation Award.

Mr. Becker was born in Sweden and educated in Germany. He has been associated with a number of eastern and Canadian paper mills, and joined Rhineland Paper Company in 1926. In 1951, Mr. Becker was a member of an ECA industrial team which spent three months in Western Europe. Mr. Becker has long been identified with Wisconsin business, civic, forestry and conservation activities.

"Integrated Forest Utilization in Crown Zellerbach Operations" will

be the topic of Mr. Edward P. Stamm, vice president of Crown Zellerbach Corporation. Mr. Stamm has been closely associated with this industry for many years. He was promoted to logging manager of C-Z in 1935, and to vice president in 1953. When Mr. Stamm joined the C-Z timber department, the corporation's ownership included about 100,000 acres, with two forest engineers. Today the ownerships in the Northwest exceed 600,000 acres and 50 professional foresters are employed. Mr. Stamm is well known in western and national forestry groups, and is a member of AFA's Board of Directors.

Wisconsin's Chief State Forester, John A. Beale, will speak on "The Wisconsin Farm Forester at Work." Mr. Beale began his forestry work in 1945, and became a district forester at Park Falls in 1948. He rose steadily in his profession and was appointed to his present position in 1954. Mr. Beale is a graduate of Michigan State College where he received a Bachelor of Science degree in forestry.

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Across our nation, thousands of Aermotor Observation Towers stand silent watch—aiding in the struggle to guard our forests and woodlands.

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Aermotor is proud of this record... proud to know that—

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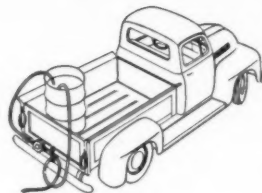
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How To Build A Fence

(From page 30)

are seven feet long, made of 6 x 6 inch or 4 x 4 inch lumber. Set ten feet apart, the posts are joined by 1 x 6 fencing board. The posts are sunk three feet into the ground, and the boards usually are set 6 to 8 inches apart. However, in areas where heavy snow drifts are common, spacing may be 10 to 12 inches apart.

Notched post and rail is one of the easiest to install and also one of the strongest types of fencing. Post and rail may be bought in 8 and 10-foot sections, or with sliding barways up to 16 feet long. As each post is set, the tapered ends of the rails are slipped into position. The next post is then dropped into its hole and the rail ends fitted into place before the post is firmly set.

A post and rail fence may be erected by setting two posts opposite one another. The rails are stacked with the ends between the posts and the posts drawn together with wire. This makes a tight, strong fence although it uses many more nails than the notched type, as the rails are closer together.

The stockade fence may be 6 feet 6 inches or more in height, serving as an absolute screen for privacy and a handsome backdrop for the garden or lawn. The basic framework is like that of the picket fence, with posts set about 8 feet apart on center, braced by 2 x 4 inch stringers. Pickets are made of tall,

slender saplings, peeled and placed close together without space in between. The saplings are usually wired to the framework, since nails would be apt to split the thin pieces of wood.

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Fences

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(From: THE CODE of 1650 of the General Court of Connecticut, and adopted by the towns of Windsor, Hartford, and Wethersfield, Connecticut, in 1638 and 1639.)

can make a back yard cozy. The enclosed area becomes an outdoor room, secluded yet spacious in feeling. Ventilation is a necessity in these rooms, as in a house. Because winds striking a solid fence tend to deflect upward and pass over the walled-in land, the louver and board-and-board fence designs have become popular. Both offer a desirable screen and permit air circulation. Louver fences in both vertical and horizontal design may be bought from a lumber dealer. When this is not convenient, the home owner can buy materials for the job. He will need 2 x 8 inch posts, long enough to allow at least one third to be put underground. (If the fence is to be six feet high, a minimum of nine feet or better yet, 10 feet, is required.) To build the vertical louvered fence in 6-foot sections, each louver board should be 1 x 6 x 70 inches.

First set the posts, and assemble the cap piece, nailing the notched piece to the underside of the 1 by 8 by 74-inch top. The points of the notches should set back 1 1/4 inches from the edge of the cap board. Fasten the assembled cap to the tops of the posts. Then fasten the lower rail in place, allowing desired clearance above the ground.

The 1 by 6-inch louver boards are then nailed to the lower rail and to the corresponding cuts in the lower cap board.

Water Yield Developments in Arizona

(From page 35)

have been looking for methods of obtaining additional water at almost any cost. Possible methods include (1) reducing waste in the use of present supplies; (2) bringing water from the Colorado River to Arizona; (3) artificial "rain-making;" (4) de-salting saline waters; and (5) increasing runoff from watershed land. Of these methods, the management of watersheds for increased runoff is thought to offer special promise.

To investigate the possibilities of such watershed management, the "Arizona Watershed Program" was organized by the Salt River Water Users' Association, the Arizona State Land Department, and the University of Arizona, "to investigate and explore possible solutions to this

(water) problem confronting the state." More specifically, the aim was to "arrive at a conclusion as to whether it is economically feasible to pursue any of several proposed watershed management modifications in the interest of obtaining a greater runoff into the reservoirs." Under the leadership of Dr. George Barr of the University of Arizona, his staff and a number of contributors and consultants made a study of watershed conditions in the Salt River Valley Area, and compiled and analyzed suggestions for watershed management of this drainage basin. As recommendations were built up, they were accompanied also by estimates to the magnitudes of water-yield increases that might be obtained by carefully planned man-

agement of watershed vegetation.

The Salt River Watershed—This large area was selected for study because of its importance in supplying water to irrigated farm areas in the lower Salt River and Gila valleys, and to the city of Phoenix, Arizona. The watershed occupies about eight million acres of desert, range and forest land above the Granite Reef Diversion Dam and below the Mogollon Rim. It includes the drainages of the Upper Salt and Verde Rivers, in whose valleys lie large reservoirs formed by the Horseshoe, Bartlett, Roosevelt, and other dams.

Most of this watershed is in public ownership. Five million acres are in national forests administered by the Forest Service of the U. S. De-

partment of Agriculture; two million acres are in Indian Reservations and other federal lands; and only one million acres are in private or state ownership.

As to the plant cover types of the watershed, approximately one and one-half million acres are in grassland: part is semi-desert range and the rest is made up of mountain meadows, some of which lie at high altitudes. Desert shrubs and chaparral occupy about two and one-half million acres, mostly at low elevations and in relatively arid areas. Pinyon and juniper occupy approximately two million acres; another two million are in ponderosa pine, spruce-fir, and aspen cover types. Water-loving, riparian vegetation or "phreatophytes" occupy an estimated 40,000 acres; and only 32,000 acres are under cultivation.

Because these different cover types naturally lie in different climatic zones with differing amounts of precipitation, they are also characterized by widely differing yields. The spruce-fir and aspen types lie at the higher elevations, particularly at the east end of the watershed on the flanks of Mount Baldy. Precipitation in this area is 30 inches or more per year, and the annual water yield of streams is estimated to average 12 inches. While much larger in area, the ponderosa pine type yields much lower quantities of water per acre, estimated at approximately four inches. The pinyon-juniper type, in a zone of even smaller precipitation, produces an average water yield of only an inch or so; while the desert shrub and chaparral areas probably do not yield much over a quarter of an inch.

As a person considers these cover types, their areas and yields, it seems logical to expect that any possible improvement in water yields from watershed management would be tied in to (1) the normal yield of the area and cover type; (2) the density of the vegetative cover and its consumption of water; and (3) the acreage of land which may be susceptible to treatment. This last consideration obviously includes both the practicality of treatment and the risk of watershed damage.

Proposed Treatments and Their Effects — Treatable areas covered with ponderosa pine occupy about 1,180,000 acres—about 60 percent of the area in the type. The treatable areas are made up of five subtypes, ranging from the stream-bank vege-

tation which has maximum access to water, through the moist slopes to the typically drier areas of merchantable and non-merchantable ponderosa pine. The recommended treatment of these areas is governed primarily by the likelihood of increasing yields, but also by the risks of erosion and the practicality of timber harvesting. The heaviest cutting of timber could be done along stream channels and on the moister slopes. In the remainder of the ponderosa pine types, it is recommended that commercial timber-cutting operations be stepped up so as to reduce the average stand per acre of merchantable timber. At the same time, thinning operations and perhaps carefully controlled "prescribed burning" would be employed to reduce the density of young pine stands which characterize this type.

The Subalpine forest area, of which a little over 100,000 acres are estimated as treatable, includes the spruce-fir, pure spruce, and aspen cover types. With annual yields estimated at approximately one foot of water, it would be expected that harvesting of timber cover would result in very substantial increases in water yield.

For the mixed spruce-fir type, the Arizona Watershed Program staff suggests that "this type should be converted as completely as possible to a herbaceous cover." While I am not convinced that such complete conversion would be necessary or desirable, it seems unlikely that even such drastic treatment would cause serious erosion or other watershed damage in this high-altitude forest type.

Lighter cutting is suggested for the pure spruce type, concentrated principally on Mount Baldy at the eastern end of the watershed. It is suggested that "a large proportion of the spruce forest should be clear cut in strips or in blocks. The specific technique to be used should be worked out on the ground with due regard to topography and wind direction. Uncut belts of spruce should be left on the summits of ridges and at other strategic points to control wind movement and to prevent excessive dissipation of the snow pack by wind and sun."

It is thought likely that only about 25,000 acres of the aspen type could be treated by the removal of trees and replacement with a shallow-rooted herbaceous cover.

Approximately 1,700,000 acres, or about 85 percent, of the pinyon-juniper type is considered by the

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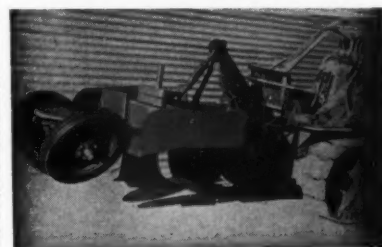
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program staff to be susceptible to treatment. This estimate may be high, because of the common occurrence of buttes and mesas and of steep, rocky slopes and ridges.

The areas which would be most likely to show water-yield benefits from watershed management are vigorous, deep-rooted stands in valley-bottoms and swales, where the trees are likely to have access to ground water or gravity water stored in the soil for a substantial part of the growing season. These valley areas and the comparatively dense stands which occupy deep soils outside the actual valley bottoms are estimated to occupy 700,000 acres of treatable area. In addition, it is possible that as much as a million acres of drained slopes can be treated.

"The greatest increase in water yield could be expected from removal of dense juniper on deep soils. . . where fire can be used, it is the most effective method of juniper control. Human habitations, intensively used recreational areas, and the like should be rigorously protected. . . . Perhaps less than ten percent of the pinyon-juniper type can be effectively burned, but this area can produce the greatest net benefits. Water yield might be increased as much as .75 to 1.00 inch as a result of juniper removal, and annual range forage production (largely obtained through artificial revegetation) would increase from essentially nothing to 650 pounds or more per acre. Soil movement and erosion will generally be decreased and conditions for wildlife will improve.

"Cabling, bulldozing, or hand chopping of juniper may be practical as a watershed treatment on valley lands where deep soils and proximity to stream channels will permit greatest increases in water yield."

Approximately 40,000 acres of stream-bottom land in the watershed are occupied by riparian vegetation which would be susceptible to control. If so, the resulting increases in water yield may be quite striking, depending on whether or not the actual evaporation losses of ground-water can be reduced by such treatment.

Aside from cultivated land which is not considered susceptible to treatment for increasing water yields, the only remaining important cover types are the desert shrub and chaparral, occupying a total of two and one-half million acres of

land in the watershed. Because the largest part of these cover types occupies extremely arid land with exceptionally low water yields, it is not considered that its treatment would result in augmented water yields. Of the two types, chaparral might be more likely to show worthwhile effects from treatment operations, both through increased forage production and through possible changes in water yield.

Except for high-altitude meadows, the grasslands of the Salt River watershed mostly occupy low elevations, with correspondingly low precipitation and annual runoff. It is considered that little can be done to increase water yield from this cover type.

From the analysis of these various cover types, the Watershed Program Staff and their contributors and consultants conclude that it should be practical to institute a program of sound watershed management on the Salt River Valley Watershed; and that such a program might be expected to increase water yields by as much as 285,000 acre-feet per year. Such an increase, while it would by no means solve the water problems of the Salt River Valley Area, would be highly worthwhile if the program can be put into effect without damaging the watershed itself.

This point is worth special comment. To my knowledge, no intimation has been made by any serious-minded people that "watershed denudation" is desirable as a means of increasing water yield, even though the complete removal of vegetation might actually produce the highest total volumes of water. I certainly hope it is clearly recognized by the laymen concerned in the program as well as by the professional foresters and hydrologists, that unwise manipulation of vegetation could result in long-term damage to the watershed. For this reason it is recognized that the management of watershed vegetation must be sufficiently conservative to insure continued soil stability. In some high-altitude areas such as the spruce and spruce-fir types, relatively heavy treatment may be safe and should produce real increases in water yields. This expectation is borne out by the results of experiments that have been conducted by the Forest Service at the Fraser Experimental Forest in Colorado. The harvesting of lodgepole pine and spruce-fir forests on experimental plots and on a controlled watershed have increased

water yields fully one-third over those experienced before treatment. In lower and more sensitive areas, more conservative removal of forest vegetation should be prescribed; and, wherever necessary, natural or artificial revegetation with shallow-rooted grasses is to be strongly recommended.

One particular feature of the proposed program must be recognized by professional foresters. In order to obtain optimum water yields from the ponderosa pine, spruce-fir, and spruce types, the forest stand may have to be less dense and the sustained wood productivity substantially lower than would be considered optimum for the production of wood alone. Because, in areas like this, the production of water is certainly higher in priority than the production of wood, this sacrifice is considered to be inevitable.

Analyses made under the auspices of the Arizona Watershed Program lead to the conclusion that a watershed treatment program of practical character can be instituted on the Salt River Watershed Area. This program of vegetation management will be large in scope and will require a number of years for completion, even with the full cooperation of all the land-management agencies concerned.

Because of the incompleteness of present knowledge on the effects of such vegetation treatment in southwestern watershed areas, the actual outcome of the program in terms of water yields and vegetation condition must necessarily be somewhat speculative. Certainly, however, it should be possible to obtain worthwhile increases in water yield without important damage to the watershed. In any event, the proposed program would seem to offer an unprecedented opportunity to institute a pilot project in watershed management, within a region where water yields are of tremendous importance. To insure the most complete information, this project should contain an intensive program of watershed research and hydrologic measurements; and each step in treatment of the watershed vegetation should be accompanied by all the physical controls needed to give optimum water yields and to prevent any serious or permanent damage to the watershed. Such controls will be required particularly in the more arid parts of the watershed, but also to a progressively smaller extent in the pine and spruce-fir areas of the upper watershed.

Convoy to Cameron

(From page 18)

nothing visible except a few power poles.

At about this point, McFatter was getting concerned about the Singer crew which was left behind for minor repairs a few miles back. He got on the radio and asked where they were. The crew leader looked around him at the vast nothingness with no landmarks and nothing but a highway in front of him and replied:

"I don't know where I am but I'm a-comin'."

The weary convoy pulled up on the opposite side of Calcasieu Pass from Cameron just after dark at about 8 p.m., but their job of reaching Cameron had just begun. They learned that the ferry operator had been drowned. It took four and a half hours to find a man who just might be able to run the ferry across the swollen, angry channel.

More than 50 million feet of pine and hardwood timber lay damaged by Hurricane Audrey in southwest and central Louisiana, according to surveys by the Louisiana Forestry Commission. The hurricane was termed the worst in Louisiana history.

The heaviest damages occurred in Evangeline, Jeff Davis, Allen and southern LaSalle Parishes.

The Urania Lumber Company lost more than five million feet of timber alone. The Industrial Lumber Company suffered a loss of 25,000 cords of pulpwood-size plantations and Crowell Longleaf Lumber Company in Rapides Parish lost more than 10 million feet of pine, much of which was virgin longleaf.

Ground survey crews reported virgin pine trees 42 inches in diameter twisted in half. Besides the timber actually broken or felled by the hurricane, thousands of acres of young plantations lie leaning like so many palm trees.

At Urania, the world-famous 175-foot loblolly pine tree was blown down.

Many research projects of the Southern Forest Experiment Station were severely damaged.

The inexperienced pilot started up the motors on the Cameron side of the pass and started across, with another inexperienced man as his assistant. As soon as they hit the main current of the channel, the boat was swept helplessly toward the gulf like a matchstick in a bathtub. Just then a tugboat came to the rescue and caught the hapless ferry a quarter of a mile downstream and shoved it back to the convoy landing. Shove is the right word, too, for it crashed into the dock so severely that it took McFatter's men another hour to repair it enough so their trucks could load.

They loaded the vehicles, locked up the drawbar and then held their breath. Back across the channel they went, slowly at first and then the current swept it again toward the gulf, hell bent for leather. It didn't help their morale listening to the operators talk:

"I told you that was what the damn button was for!"

"Well, what's this here lever for, then?"

But, God bless 'em, they gunned their engines finally and held their own in the current, gradually slipping out of the current about a half-mile downstream. Then, they made their way up the stream near

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the bank and landed the boat perfectly at the dock.

Once on the other side of Calcasieu Pass into the town of Cameron, the convoy was still faced with the task of getting to the courthouse, one of the very few remaining buildings that had weathered the hurricane. This was headquarters for all Civil Defense operations.

In the middle of the street was a tugboat, an oil drilling rig about 250 feet wide and two stories high and a shrimp boat, all swept into town on the tidal wave. The smell of dead animals and human flesh hit them in the face like a sledgehammer. In the middle of town, there were at least 500 dead cows.

They reported to the state police upon reaching the courthouse and

soon were busy hauling everything from clothing to generators from the boats to the courthouse. When dawn broke, the boats went out on the grisly task of searching for human bodies. They found them and brought them into shore, and then it was the forestry outfit's job of hauling them from the boats to the icehouse, which was set up as a temporary morgue.

They worked for 36 hours after arriving at the courthouse, then were released when other equipment started trickling in to relieve them.

McFatter said every step they took was worth it when he saw the grateful expression on the state policeman's face on hearing him report:

"Sir, we have four trucks and tractors out here. Can you use 'em?"

Hayden-Morse Colloquy

(From page 5)

more of the timber is sold, and competitive bidding is increased, with a result that a better price is obtained for the timber. All that adds up to increased revenue in the federal treasury. Is that correct?

Mr. HAYDEN. That is correct.

Mr. MORSE. Fourth. Someone is going to spend the money, either the purchaser who pays less for the federal timber and builds the road, or the government, which builds the road and then sells the timber for more money. So there is no inflation involved in an increase in the budget here.

Mr. HAYDEN. No inflation whatever.

Mr. MORSE. Fifth. I should particularly like the distinguished chairman to consider with me another aspect of this problem. Is it not true that where national forests are located, both in the West as well as in the East, often 50 percent or more of the land in the county is in national forests?

Mr. HAYDEN. That is true.

Mr. MORSE. Sixth. Is it not also true that these counties depend upon 25 percent of the revenue from the national forest as "in lieu" payments?

Mr. HAYDEN. Again the Senator from Oregon is correct.

Mr. MORSE. Seventh. Is it also true that these funds must be used for the schools and roads in those rural counties?

Mr. HAYDEN. The law so provides.

Mr. MORSE. Yes, and that should be stressed at this point in the RECORD. When we speak of these funds in lieu of taxes, it should be pointed out that the counties use these funds for roads and for schools in the counties, and this is a very important source of county income.

Mr. HAYDEN. Many small counties could not carry on a county government unless they had this revenue.

Mr. MORSE. Otherwise the school system would break down, in such cases; is that true?

Mr. HAYDEN. That is true.

Mr. MORSE. And we must not forget that the schools are in part for the benefit of children of hundreds and in some cases thousands of workers in the woods and in the mills, whose livelihood is dependent upon the timber economy. In fact, in some counties in my state the entire economy would come to a standstill, as it is gradually happening now in some of our counties where the lumber industry suffers a depression.

My eighth question is as follows: I should like to inquire whether or not the Senator from Arizona believes that these several hundred rural counties in the 38 states where there are national forests are in good financial shape to maintain their roads and schools.

Mr. HAYDEN. They must have these funds.

Mr. Morse. Ninth. Would the Senator agree that they do not have a tax base for these federal lands which would enable them to put on such forest lands, a valuation of, for example, \$50 an acre and a 100 or 200 mill tax rate?

Mr. HAYDEN. The answer is "Yes."

Mr. MORSE. Tenth. Instead, is it not true that the counties get 25 percent of receipts, and these receipts may fluctuate between counties as cutting varies in the national forests; and thus the counties lack a stable or predictable income?

Mr. HAYDEN. That is true, also.

Mr. MORSE. Eleventh. These counties cannot collect back "in lieu payments," can they, if cutting temporarily drops and revenues decline?

Mr. HAYDEN. No; it all depends on what was done during a given year.

Mr. MORSE. That is, on an annual basis. That is why I receive so many protestations, when the economy of so many counties in Oregon is suffering. If the counties do not receive the money this year, they cannot collect it on an retroactive basis.

Twelfth. On page 853 of the House hearing I inserted the timber access roads cost record in Oregon and Washington. In 1953 roads financed by reducing the value of government timber worth \$6.8 million were constructed, while in 1956 almost 3 times that, or \$18 million of roads, were constructed by this method. In 1955 the value of such road construction was about \$12 million. It jumped about \$6 million between 1953 and 1954, and \$6 million more between 1955 and 1956. Does it not appear to the Senator that the Forest Service has drastically expanded the part of its road-construction program that is to be built by timber purchasers?

Mr. HAYDEN. It has, in recent years.

Mr. MORSE. I so understand. I deplore it, Mr. President, so far as roads built by purchasers are concerned. I commend the Forest Service for every road it helps build itself.

Mr. HAYDEN. The Senator should remember it has been somewhat difficult to persuade Congress it was sound public policy to build such roads. The Forest Service should not be blamed entirely.

Mr. MORSE. I do not blame it entirely. This is really an educational process in getting many per-

sons, including members of Congress to understand that a capital investment such as is here proposed is not only self-liquidating, but actually returns to the Treasury many times its cost, by way of increased profit from timber.

Thirteenth. Is it also not true that, by using this method to finance road construction, in 1956 alone, \$4½ million that should have been available to the counties for local schools and roads was in effect taken from them?

Mr. HAYDEN. That is my understanding.

Mr. MORSE. Fourteenth. Does the Senator understand that it is a part of the administration's program and a part of the program of the Democratic Party to aid local governments in school construction?

Mr. HAYDEN. That is my understanding.

Mr. MORSE. Fifteenth. If we appropriated the full authorization, would we not be helping to see to it that the local governments got all the money from these vast federal holdings to which they were entitled? Might this also perhaps help to meet a portion of the demand for federal aid to education?

Mr. HAYDEN. It undoubtedly would.

Mr. MORSE. I think that would be sound federal aid to education. Here are these "in lieu" payments going to the counties, with a pledge by the counties that a certain amount of the 25-percent portion will go to provide schools to benefit the children of lumber workers who are developing these forests.

Sixteenth. Is it not possible that in the last 4 years the several hundred counties in the 38 states where national forests are located have been shorted by 40 million or more in funds which could not have been used for schools and roads?

Mr. HAYDEN. If the Congress had done what the Senator from Oregon and I would have liked to see done, that would not have occurred. That is true.

Mr. MORSE. That would have been the effect of it. I think it is a fair description of what has happened. This has been false economy on the part of the Congress. As a result, the counties have suffered in getting "in lieu" payments, and the federal Treasury has suffered, because if the roads had been built, our national forests would have produced more revenue.

Seventeenth. Is it not true that the way this timber purchaser-road

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construction program has operated, it has been hard for the local governments to understand what has been happening to their potential forest income?

Mr. HAYDEN. That appears to be so.

Mr. MORSE. Eighteenth. I want to be perfectly fair with this question, I may say to the chairman of the committee. If the Forest Service had not proceeded to sell timber, even though a big road job was tied in, then there often would have been no revenue. Is that correct?

Mr. HAYDEN. That is correct.

Mr. MORSE. Nineteenth. So the Forest Service had no choice in the face of Budget Bureau Policy?

Mr. HAYDEN. That is correct.

Mr. MORSE. The Forest Service is not to be blamed entirely for that, as the Senator from Arizona said previously, although I have felt it should have been more militant in its activities before Congress, and prior to the matter reaching Congress, with the Bureau of the Budget, and, through it, the administration, whether it was Republican or Democratic, in trying to get larger amounts for access roads.

Twentieth. I should now like to inquire about another aspect. The national forests are about 2 billion board feet under their stated allowable cut. If this timber could be put on the market, would it help the economy in the 38 states that have these great national forests?

Mr. HAYDEN. There can be no doubt about that.

Mr. MORSE. Twenty-first. Is the Senator familiar with the fact that our old-growth, high-quality timber is being cut much faster than it grows?

Mr. HAYDEN. That is true.

Mr. MORSE. Twenty-second. Is the Senator also familiar with the Forest Service report that timber quality is declining?

Mr. HAYDEN. I have heard such reports.

Mr. MORSE. Twenty-third. So if more of the national forest timber could be cut up to sustained yield, overcutting in some private forests might be reduced?

Mr. HAYDEN. That is correct.

Mr. MORSE. Twenty-fourth. So when the General Accounting Office makes the recommendation to build roads with appropriated funds, it does so because it has studied the situation and sees an economy. Is that correct?

Mr. HAYDEN. That is true.

Mr. MORSE. I wish to commend the GAO for the recommendation it has made in this matter.

Twenty-fifth. Did the GAO not show that when we appropriated funds to the Forest Service for roads they had bids 13 percent below the engineers' road cost estimates? So there was a stretching of the taxpayers dollar here?

Mr. HAYDEN. It so appears in its report.

Mr. MORSE. Twenty-sixth. GAO also showed that when timber purchasers built the road, the timber cut often exceeded the estimate. In the cases it sampled there was 21 percent loss. Is that correct?

Mr. HAYDEN. That is correct.

Mr. MORSE. Twenty-seventh. Thus, is it not true we may have a 21-percent loss under timber-purchaser construction, and we do not always have the opportunity for a 13-percent saving due to bids?

Mr. HAYDEN. The Senator is again correct.

Mr. MORSE. It illustrates the great saving we would make for the taxpayers if we did not have this pennypinching, false economy move in regard to access roads. If we built the roads needed, we would help the counties, the schools, and the Treasury of the United States.

Twenty-eighth. The Senator is also aware that these road projects may cost \$500,000 or more each. So some big losses have occurred, have they not?

Mr. HAYDEN. They have.

Mr. MORSE. I wish to say to the Senator that because I have had a discussion with him about it and I know his attitude concerning the amendment I had intended to propose, I am not going to offer the amendment, but I am going to have it printed, inasmuch as I do not believe in engaging in idle gestures on the floor of the Senate. I believe it is a sound amendment, but I am going to follow my leader's advice, and the Senator from Arizona is my leader in this matter, I may say. I hope next year we shall be more successful, if the administration follows a course which will make it necessary to offer such an amendment.

The amendment to which I refer would appropriate the full authorization, which is \$27 million, instead of the \$24,336,000 requested by the Budget Bureau, which would be but a \$2,664,000 increase. It is all we could do under the circumstances it

seems to me, but am I correct in my understanding that the Senator thinks it would be a mistake for me to offer the amendment because he does not believe anything could be accomplished by taking the amendment to conference?

Mr. HAYDEN. That is my view. The Senator understands the situation with which we are faced. There has been an insistent and persistent demand for economy, and that the budget be cut. The House has made reductions in all appropriation bills.

Only in one instance this year, prior to this time, has the Senate passed a bill providing for a larger total sum of money than the House had provided. In all other instances, the Senate has provided less than the House.

In the Health, Education, and Welfare Appropriation Bill, we did provide some additional money for cancer, heart disease, and other research work. It yet remains to be determined whether those amounts will be retained in conference.

With respect to this matter, I have carefully read the report of the Comptroller. I think he makes an excellent argument. For the first time we observe that an agency of the government actively supports, with facts and figures, what the Senator has been saying and what I have been saying. This is, I think, the first time I have ever asked the Senate under any circumstances not to vote money for access roads in the national forests. I have always urged that more and more money be spent. For that matter, I have always supported road appropriations of all kinds.

However, in this instance, we propose to find out during the course of the present year what the true situation is. As the committee report shows, we have asked the Forest Service to give us even more accurate and more detailed figures than have been obtained by the General Accounting Office. The General Accounting Office operated only through spot checks in various sections of the country. The Forest Service can consolidate that information.

Based upon that action, I intend to request the Secretary of Agriculture and the Director of the Bureau of the Budget, as an economy measure, to recommend more money for this purpose. What is really needed is not an increase of approximately \$3 million, which the Senator is suggesting, but an increase of about \$30 million. If we appropriate \$30

million more for this work, which is approximately what the Forest Service is now allowing the major operators to spend, for which they get a reduced price on their stumpage, that expenditure will bring in a very substantial profit to the Treasury. If those involved can be made to understand that point, the budget estimates next year should be in very much different shape from what they are this year.

Mr. MORSE. If the Senator from Arizona will yield further—and I am almost through—I want him to know that I speak for the cosponsors of the amendment when I say that we appreciate very much not only the statement he has made on the floor of the Senate at this time, but also the grand cooperation he has always extended to those of us from national forest states with respect to the access road problem.

I agree with the chairman of the committee that \$30 million ought to be the minimum figure. I think the Senator will agree that we have not gone that high before, because we have had pretty hard sledding, so to speak, in getting as much as we have been able to get from year to year.

As a result of the request the chairman of the committee has made to the Forest Service, we hope that we can obtain a figure next year somewhere near \$30 million.

Mr. HAYDEN. The Senator will agree that \$3 million, while helpful, is not adequate to do the work.

Mr. MORSE. It is certainly not adequate. We thought it was a request in the right direction, and that is why we urged that this much be provided.

For the record, I wish to say that we desire to work with the chairman and the distinguished members of his committee. We do not want to

ask them to take to conference an item that may prove difficult just now. We agree that it would be proper to conduct the careful study the committee has called for as promptly as possible so the results will be ready for next year's budget.

The record should show that if we appropriated the full authorization we would not really be expending 1 cent more. Instead of timber access roads getting \$15 million plus from appropriated funds, they would get \$18 million. Timber purchasers would contract \$42 million worth of roads instead of \$45 million worth. I think the conference report should show this to be the fact. We can extend this help to our timber economy, and to local governments that need schools and roads.

If the chairman believes that in these friendly discussions we have helped develop a factual record on this matter, we will not seek to put the question to a vote but await the study.

I think the remarks of the chairman of the committee on the floor of the Senate show that we are in complete agreement as to our objective. I want the chairman to know that we appreciate the legislative history he is making. We hope the conferees in their report will cover this matter thoroughly, so that next year, without having to offer amendments, we can secure an appropriation somewhere near \$30 million.

Mr. President, I should like to have my amendment, which is identified as amendment A at the desk, printed at this point in the RECORD, but I announce that I shall not call it up, because of the legislative history which the Senator from Arizona has helped me make on this matter, for which I thank him very much.

Klamath Indians

(From page 4)

cause of the fact that government acquisition of the reservation would add almost a million acres to the national forests. . . . in the liquidation of the reservation the welfare of the Indians should be given primary importance. These people have depended upon the government for so many years, I doubt if they are qualified to handle their own affairs properly at this time. A trust of some kind similar to one to take care of minor children might be the proper solution."

An Investment Banker: "Perhaps a government corporation, or authority, could be formed to take over the property with its charter limited to 20 or 25 year life. Perhaps a shorter life would encourage the sale of all commercial land to private ownership sooner."

A Lumberman: "You have certainly stated the problems in a very clear fashion, and I think the industry and our company must now clarify just where we stand."

An Indian: "I believe in the free enterprise system. I am against Socialistic ideas. I believe that we have in Oregon some company or companies that could take over and manage these lands both for the good of the Indians and for the good of the resources. Some of these firms have already demonstrated that they can and will manage their resources for the future. In view of that fact, why continue to turn over more and more land in Oregon to the federal government where much of the land is already in the government? While it is true that these Indian lands have been managed by agencies of the government in

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or trash.

the past, it is also true that these lands belong to the Indians. I say keep these lands in private ownership. Hasn't private enterprise the ingenuity to prevent these lands going to the government by default?"

A Forester: "Alright, so there is a large body of opinion that wants to see these lands go into the tax-paying structure of the nation rather than into federal ownership. Then I say this: you have already suggested that the Oregon Forest Practices Act is not sufficiently strong to provide proper forestry safeguards. Let this, then, be a challenge to the people of Oregon to enact a forest practices act that will guarantee sustained-yield forestry on these lands and all other forest lands in the state. If a great block of timber previously under federal management is to go to private ownership, let private ownership face up to the long-term responsibilities inherent in the management of this timber. This would be the one sure way to lay public fears on this score to rest."

An Educator: "My preference would be to defer effectuation of the provisions of P. L. 587 until the whole subject can receive further study. If this is impossible, then I would favor in principle the proposals contained in S. 2047. Some changes in detail may be desirable, but I think the basic proposal is sound. Certainly some arrangement that will permit management of the timber on a sustained-yield basis is essential from the public point of view."

A Forester: "This letter is to express my fervent hope that The American Forestry Association will support S. 2047 or similar legislation, designed to give permanent assurance of sustained-yield management of the timber on the Klamath Indian reservation."

A Conservationist: "Those of us who are interested in the Klamath forest land problem owe you many thanks for your keen analysis in the May issue of AMERICAN FORESTS, capped by your summation report of May 10, following your recent trip to Oregon. Your thought-provoking comments, suggestions and queries, prompt us to wish that there might be found an easy, push-button solution. But, instead, we have a free-wheeling example of Emerson's Law of Compensation, with 'equal and opposite reactions.' If we do this, we discover that. If we follow that, we upset this. If we do neither, something else again waves a red flag or screams to high heaven. We need a Solomon to help us find the real answer to this baby."

"The frightening prospect is that the Klamath case is not the end in itself. What is done here will set a pattern for the treatment of other tribal lands."

A Conservationist: "Let the Ethnic and Indian associations talk about Indian welfare and AFA pinpoint the management of forest lands."

A Forester: "Speaking from a personal point of view, I am convinced that the forestry practices on these Indian lands after sale, no matter to whom, will continue generally at an acceptable level of productivity. . . . A survey of 1956 cuttings on private forest lands in the pine area of Oregon, including Klamath County, showed that 88 percent of the total volume cut was above minimum standards of forest practices and over 70 percent of the total volume cut was classed as of high order."

A Forester: "The first consideration is the Indians and their welfare. The second is the continuation of a high level of management practices on the lands involved. If the lands are to be turned over to the federal government at the retail figure the Indians should receive, the federal govern-

ment cannot justify the acquisition on the basis of the long-paying terms management practices. It can only be justified on the basis of a wholesale price plus a direct indemnity to the Indians. Therefore, this indemnity is a responsibility of the federal government whether the property is disposed of to private interests or to a federal agency. This is a point few people realize and it is a point that AFA could very well make."

An Oregon Lumberman: "I am enclosing an editorial from the *Oregonian* favoring the Klamath program as recommended by the management committee. (The Editorial endorses S. 2047 for federal purchase.)"

A Klamath Businessman: "I feel that government purchase of all the assets is the most logical approach."

A Klamath Cattleman: "Industry is doing all right with its own land. Why not let them handle this and get some help with the tax roll?"

A Forester: "It would seem logical that however the lands are disposed of, adequate provision should be made to ensure multiple use. The marshlands should be retained as is or improved for migratory waterfowl. Fishing, grazing, recreation, timber and water are all products or services which should be available to the public from these lands."

There are already several established small mills in the Klamath Basin. The opportunity for these small mills to participate in the harvesting of the timber should be protected. This can be accomplished only under public ownership with small sales of timber under competitive bidding.

The only way I can visualize sustained-yield timber harvest, multiple use of the resources and permanent protection of the marshlands is under federal ownership."

A former Justice of the Peace: "The Indians are not ready for termination. They will blow their money and be back on the town. Federal purchase and put their money in trust is the answer."

A Sportsman: "Giving the Indians lifetime hunting and fishing rights make them super-citizens. If you are going to terminate the reservation, they ought to be just like anybody else. I mean pay them off for all their rights, whatever they are."

A Clubwoman: "First, I believe in the program of giving Indians the opportunity for self-support, and for terminating, as fast as possible, their wardship by the government."

Secondly, I question the ability of Indians to handle large sums of money. . . . With my own eyes I have seen Indians use money as we use water.

This is one reason I believe their holdings in the Klamath area should be managed for them so that they might receive an annual income rather than one lump sum. If their wardship is terminated and they then sell their holdings, it is my belief that it won't be long until the majority of them will again be wards of the government of Oregon as relief cases.

There are probably a number of ways by which the holdings of the Indians could be managed, both for the welfare of the Indians and the best management practices for resources. It seems to me that with the termination program of this tribe some new paper should be set up that would be satisfactory to the Indians, and meet the requirements of good forestry and wildlife practices also. One possibility is that the timber could become a part of the U. S.

(Turn to page 71)

What's NEWS across the nation

UNLESS OUR PERISCOPE IS OUT OF KILTER, what amounts to a sizable new bloc of eastern suburban voters who extend almost in a continuous, unbroken line right down the Eastern seaboard into the Deep South, is quietly fixing to support and elect a President in 1960, a candidate, be he Republican or be he Democrat, who will swear a sacred oath to drastically slash non-essential public expenditures, cut taxes to the bone, and in general put an end to what one reader recently referred to quaintly as "damn fool projects."

IF WE HAD ENTERTAINED ANY DOUBTS ABOUT THIS PREVIOUSLY, those doubts were disabused when the Senate upped and passed the bill for the high Hells Canyon Dam to be built at public expense whereas the one already started is to be built at private expense. In our mail following that episode were over 50 letters from eastern readers all "viewing with alarm"; and six of these contained copies of a recent editorial in the Wall Street Journal which called the Senate's action reckless irresponsibility. That these readers agreed with that editorial is putting it mildly.

WHO ARE THESE SUBURBANITES? What makes them tick? Any editor knows that both the population and his readership are subject to constant and continuing subtle changes; and if he is wise, he endeavors to keep abreast of those changes. To do this he has only two yardsticks for measurement—his mail and travel. As might be expected, the readership of any conservative-type magazine is quite a mixture ranging from actors like James Cagney and violinists like Yehudi Menuhin to prospectors in the Far North who like to read about trees and growing things. We have always had, of course, many school teachers, many doctors (a great many doctors read American Forests), many foresters and so on.

TO THIS IRISH STEW, something new has been added since the war. It comprises what amounts to a new school of readers living in well-kept suburbs who seem to think very much alike on many matters. These people make anywhere from \$7500 to \$12,000 a year and their prospects are good. They have several children and plan to have another after the next raise. They are buying their own home costing anywhere from \$18,000 to \$28,000. They are living at the moment in an area slightly above their present means but they intend to remedy that situation in short order. They own at least one car and sometimes two. They are active in church, civic, and PTA affairs. Quite often the wife is active in the League of Women Voters. Both parents are gluttons for self-improvement and go in for study groups and lectures. They read more for knowledge than they do for fun. They believe in "taking charge" of any given situation. Four of the words they use most frequently both in their letters and their conversation are "stable" and "unstable," "moderate" and "immoderate." Both people and situations are quickly pigeonholed in one of these two categories. Anything that upsets their projected program in any degree is "unstable" and "immoderate" whereas anything that helps it is "stable" and "moderate."

ARE THEY ARCH-CONSERVATIVES? On the contrary, they seem to be rather liberal on most things—everything except spending money that is. Whether it be in Connecticut or Richmond this group can discuss such matters as the Supreme Court rulings on desegregation or the Communist trials calmly and with objectivity. While some young attorneys disagree, most of them are inclined to admire Warren on the basis that past years have seen too much playing fast and loose with individual liberties. They admire both the young Kennedys. They respect Dick Nixon as an example of a "stable" young man who has made the most of his opportunities.

They "like Ike" but with more reservations than during his first term. In some respects, they feel the last budget was "immoderate." They respect Secretary Benson rather immoderately on the other hand for such "moderates" because, as one reader has it, "He did his best to pare down the parity." They watched the departure of Treasury Secretary Humphrey with regret because they think "he tried" and they believed implicitly his famous "curl your hair" statement. How do we know? Because we got little notes from some of them cancelling their subscriptions in effecting little economies against the day.

ONE TRAIT THIS GROUP HAS IN COMMON is that it asks the cost of everything, which represents a departure from the Old New Deal Days when nobody asked the cost of anything. When it comes to big public works programs, this group becomes downright waspish. Listen to this comment from a well-to-do Philadelphia suburb. ". . . It seems to me, that the Senate was guilty of an irresponsible action in voting for the Hells Canyon Dam which is already being built. While one cannot blame western legislators who doubtless feel they are looking after the best interests of their constituencies, I believe our eastern representatives let us down when they go along with proposals that greatly increase taxes. As Mr. Moley of Newsweek has suggested on occasion, why must we easterners go on paying for these expensive projects when we benefit very slightly if at all from them. This sort of action on the part of the Senate indicates that there is a certain amount of instability in Washington today that does not auger well for the future of millions of families just getting started who have taken on certain responsibilities which they hope and intend (underscoring ours') to meet. Enclosed is an editorial from the Wall Street Journal which states the matter very well indeed."

HERE'S ANOTHER ONE. . . "I have read your journal for two years now and I find it very informative and educational. The thought does occur to me, however, that conservationists are great for spending, the public's tax dollar that is, and it seems to me that wherever and whenever possible journals like your own should place great emphasis on the importance of self-help in such matters as water impoundment and valley improvement programs. I am very frank to say I would rather spend my money myself than have the government do it for me. As an example of what I mean, I enclose a recent statement from the Wall Street Journal which impresses me as a very constructive comment."

AGAIN, THIS TIME FROM A SUBURB IN GEORGIA. . . "We in the South are well aware of the importance of tree growing to our economy, and I think you are doing a good job in pointing up these matters intelligently. However, I am 32 years old with growing responsibilities; and I feel that all individuals and groups in a position to do so should exert a very tight rein in holding down government costs and expenses. If our insurance policies, our homes and similar investments are to have the stability we all desire, excessive spending must be curbed. I agree heartily with the attached clipping from the Wall Street Journal which is another example of how we people in this part of the country are taken for suckers."

ALL WHICH INDICATES THAT TIMES HAVE REALLY CHANGED. When we were 32 years old we never read the Wall Street Journal, and we would have been suspicious of any contemporary who did—probably an economic royalist we would have thought. We didn't own any home, any car, or any children because we weren't making enough money and anyway we were too busy covering such things as the sitdown strikes in Akron and the Republic steel strike in Canton and Massillon. No, the Wall Street Journal definitely was not the hero of the young fry of that period. Not that these young easterners of today are anti-union—that would be unstable and immoderate—but their heroes seem to be the ambitious young executives in the neatly pressed suits and not the union organizer on the picket line about to get his head bashed in by some company goon.

WHAT THE IMPACT OF THIS GROUP MAY HAVE ON PUBLIC AFFAIRS, we are not prepared to say; but they seem to be a new breed in that they feel that "being liberal" is not necessarily synonymous with vast public spending programs. And as stated previously, this particular bloc seems to be liberal about everything except spending vast sums of money when, in their book, private concerns can do the proposed projects nearly as well or at least "well enough." One thing is sure—one has to go further back than the New and Fair Deals to find anybody like them. Maybe they are throwbacks. (JBC)

Klamath Indians

(From page 68)

Forest Service holdings. Another is that the government should retain some supervision of the sale, if it is to be sold.

For these reasons it seems to me that a special stipulation should be included which would allow for the government (or private enterprise if they wish to assume the obligation) to manage the natural resource holdings, with the Indians receiving annually the net income therefrom."

A Local Citizen: "The reservation ought to be disposed of at private sales so that it will carry its share of the tax burden. You can't expect to develop the country unless everybody carries his share of the load."

An Attorney: "While federal purchase will ensure sustained-yield, it isn't necessarily the best thing for the Indians or the government. The government has a moral and legal obligation to get the best price for the Indians. Federal purchase at an appraised price leaves open the question of the real value. Competitive bidding on sales of moderate size might produce a bigger return. A smart lawyer might take the case to the Court of Claims and secure a sizable indemnity as has been done before."

A Forester: "I don't want to see any kind of a private sale that carries a legal requirement to practice sustained-yield. That might cast the Forest Service in the role of policeman and result in federal regulation. On the other hand, I don't want to see the national forest system expanded. If there is any money for acquisition, it ought to be spent to block up interior holdings on national forests and thus reduce the per acre costs of administration. Furthermore, private owners of interior holdings get a free ride on fire protection and road maintenance as well as having an edge on competitors for national forest products."

An Association Executive: "The Indians ought to lease the whole property to some good industrial concern. It would be just like clipping coupons on a gilt-edged security."

A Legislator: "This is Indian property and they have a right to decide what they wish to do with it. But it also is a federal responsibility to see the wards of the government do not do something detrimental to their own best interests."

(Note: One concern is protection of approximately 1,000 minors and incompetents, nearly half of the Klamath tribe, from dissipation of their estates through legal fees. On May 14, 1957, while introducing H. R. 7524 "to provide for proper guardianship of minors and incompetents," Representative Edith S. Green of Oregon said:

"For example, if the estate of the minor is \$50,000, the cost of the first year to establish the guardianship estate under the fee schedule of the Klamath County Bar Association will run as high as \$4,064, where an individual guardian is used. Assuming no withdrawals of capital and a normal return, annual attorney and guardianship fees will consume \$1,000 of the estate, so that at the end of 15 years the estate, through guardianship and attorney fees alone, will have been decreased by \$18,064. The minor, out of an estate of \$50,000, would have left about \$31,000.

"And this example is based on the assumption that only the minimum fees will be charged.")

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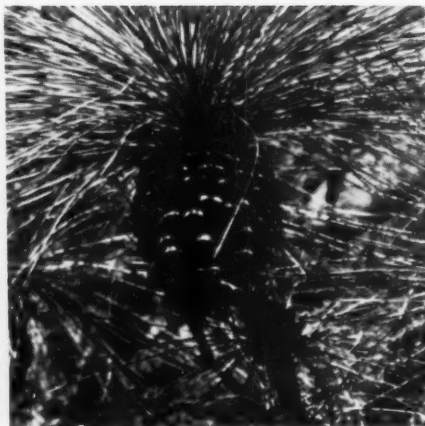
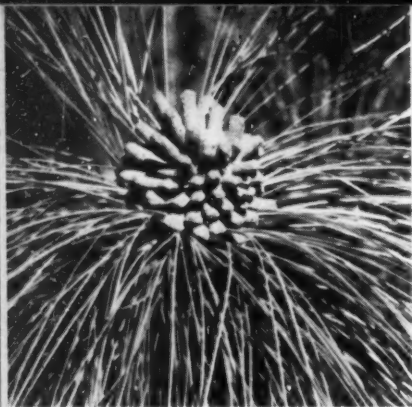
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You may have three chances to win! Grand Prize — a free Homelite chain saw every year for life, PLUS 25 chain saws being given free by Homelite District Offices, PLUS hundreds of chain saws being awarded by Homelite dealers in their own local contests!

Nothing to buy, nothing to write, no obligation! Just have a free demonstration of the new Homelite 6-horsepower Power Twins at your nearest Homelite dealer. Fill out the entry blank and you're automatically registered for all the awards. Do it today! Limited to United States residents. Subject to local, state, county and city laws.



6 Horsepower 22 Pounds

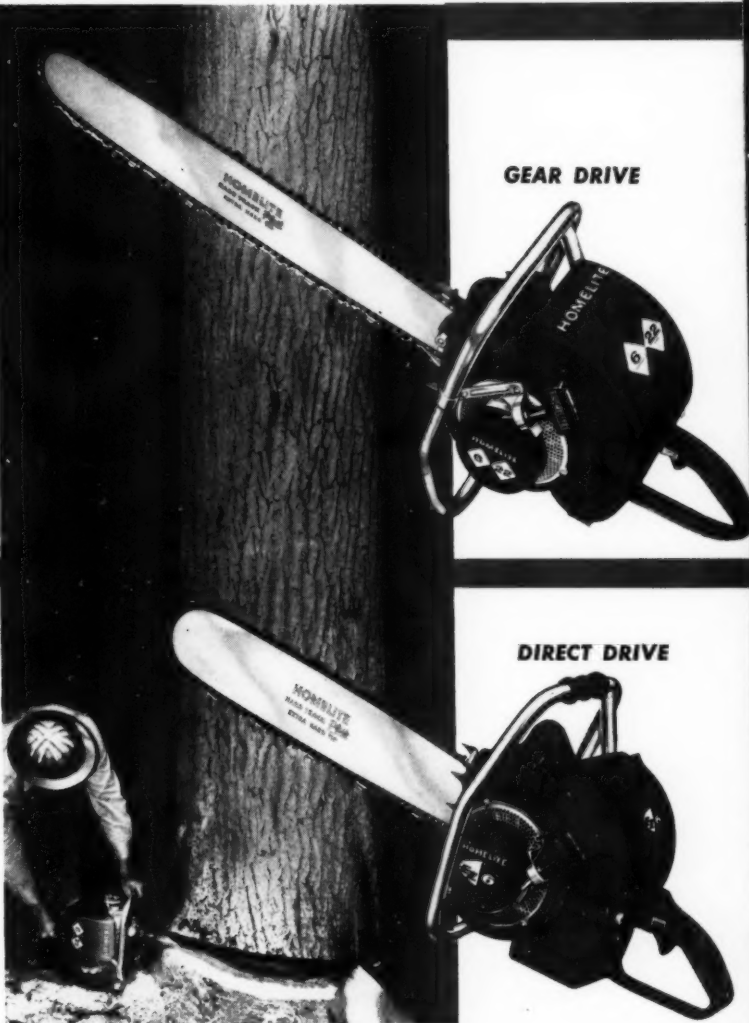


You get top production in the big trees with the new Homelite 6-22. The 6 full horsepower packed into only 22 pounds has the lugging power to bring down trees up to 7 feet in diameter, cut through 20" trees in 18 seconds. And you get more profitable cutting because the famous Homelite short-stroke, high-compression engine stands up under the grind day in and day out with less maintenance, less down-time. Money-saving attachments let you convert quickly from straight blades to plunge-cut bow, brush-cutter or clearing bar.

6 Horsepower 19 Pounds



Fastest-cutting direct drive chain saw made, the EZ-6 makes quick work of trees up to 5 feet in diameter. Zips through 8" oak in 4 seconds, 18" pine in 14 seconds. Light weight and perfect balance make the EZ-6 easy to handle and operate for all types of cutting . . . felling, notching, limbing, topping, buckling. Cuts in any position. Easily converted to 14" plunge-cut bow for pulpwood production.



HOMELITE

A DIVISION OF TEXTRON INC.

4208 RIVERDALE AVE., PORT CHESTER, NEW YORK

Manufacturers of carryable pumps, generators, chain saws, blowers
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**Homelite builds and sells
more chain saws than any
other company in the world.**





MORE WORK —faster and cheaper!

**Slash disposal and stand improvement
job in the Missoula District of Lolo
National Forest, Montana, efficiently
handled by Caterpillar D6 Tractor**

Howard E. Long, Clinton, Montana, won a contract with the Forest Service to pile slash and scarify the ground for reseeding in an area that had been logged during the spring.

Here you see him and his CAT* D6 Tractor with brush rake at work. On most occasions, he was able to handle several chores at one time—piling slash and culled logs, pushing over and piling snow-damaged and diseased fir and scarifying the ground for natural reseeding of ponderosa pine. The power and maneuverability of the D6 helped him do fast, careful work around the mature pines which had been left as seed trees. In all, he covered more than 113 acres, at a cost to the district of only \$1575.

Whether the job is slash disposal, stand improvement, building access roads or firebreaks or fighting fires, you can depend on this: You'll get full value from a Caterpillar Diesel Tractor. From the 3¾-ton, 48 HP D2 to the 29-ton, 320 HP D9, each unit is ruggedly built to do *more* work at *lower* cost with *less* down time than any other machine in its power range. Want to see facts and figures that *prove* this? Just call your Caterpillar Dealer—he'll be glad to show them to you!

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

CATERPILLAR*

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WOODS EQUIPMENT**

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